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Handbook of South Carolina

South Carolina. Dept. of Agriculture, Ebbie Julian Watson

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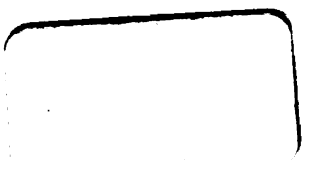
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HANDBOOK

OF

SOUTH CAROLINA

Resources, Institutions and Industries of The State

A Summary of the Statistics of Agriculture, Manufactures, Geography, Climate, Geology and Physiography, Minerals and Mining, Education, Transportation, Commerce, Government, Etc., Etc.



E. J. WATSON, Commissioner

SECOND EDITION

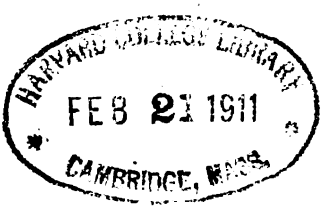
1908

THE STATE DEPARTMENT OF AGRICULTURE,
COMMERCE AND IMMIGRATION
COLUMBIA, S. C.

COLUMBIA, S. C.
THE STATE COMPANY.
1908.

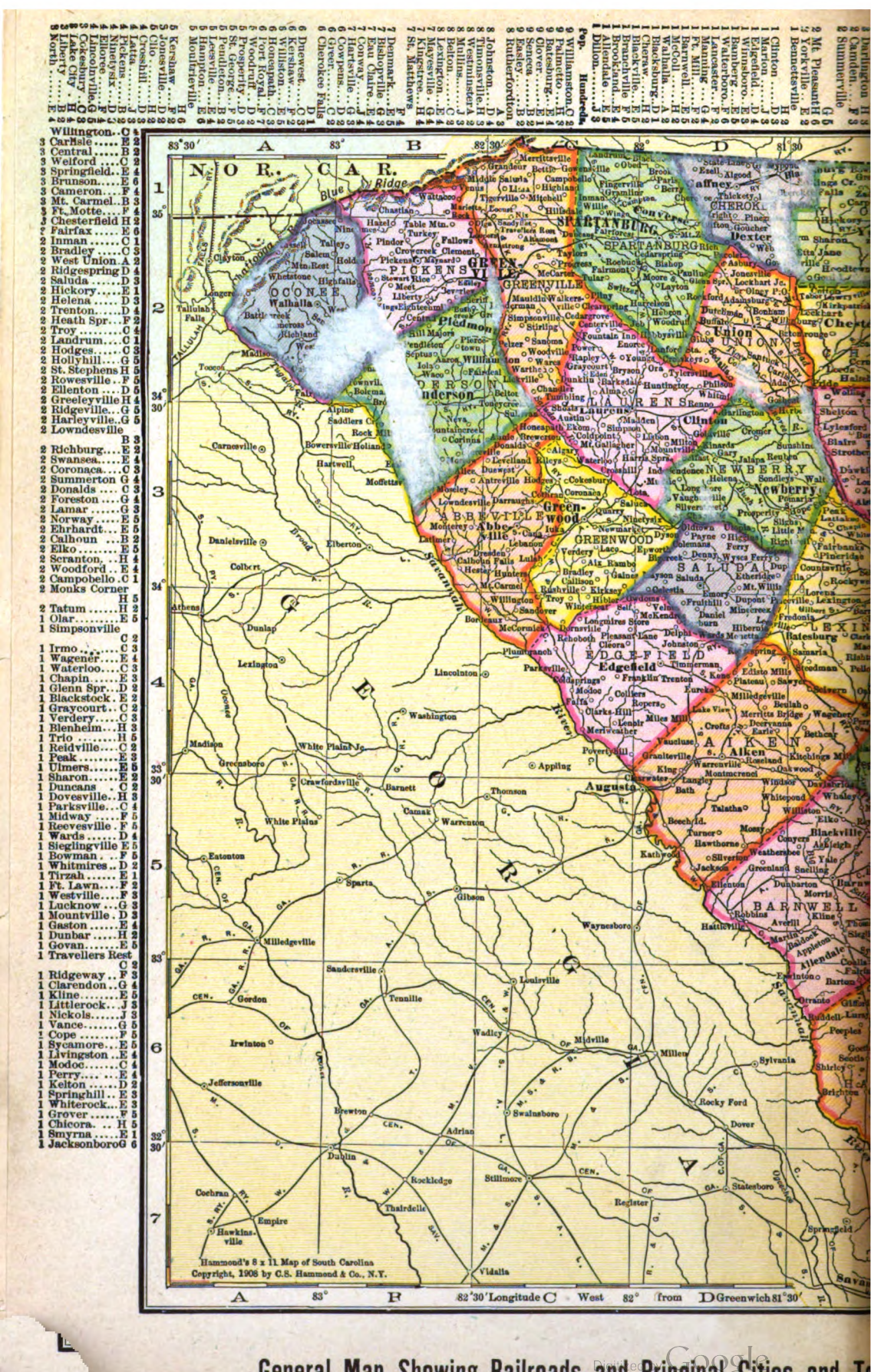
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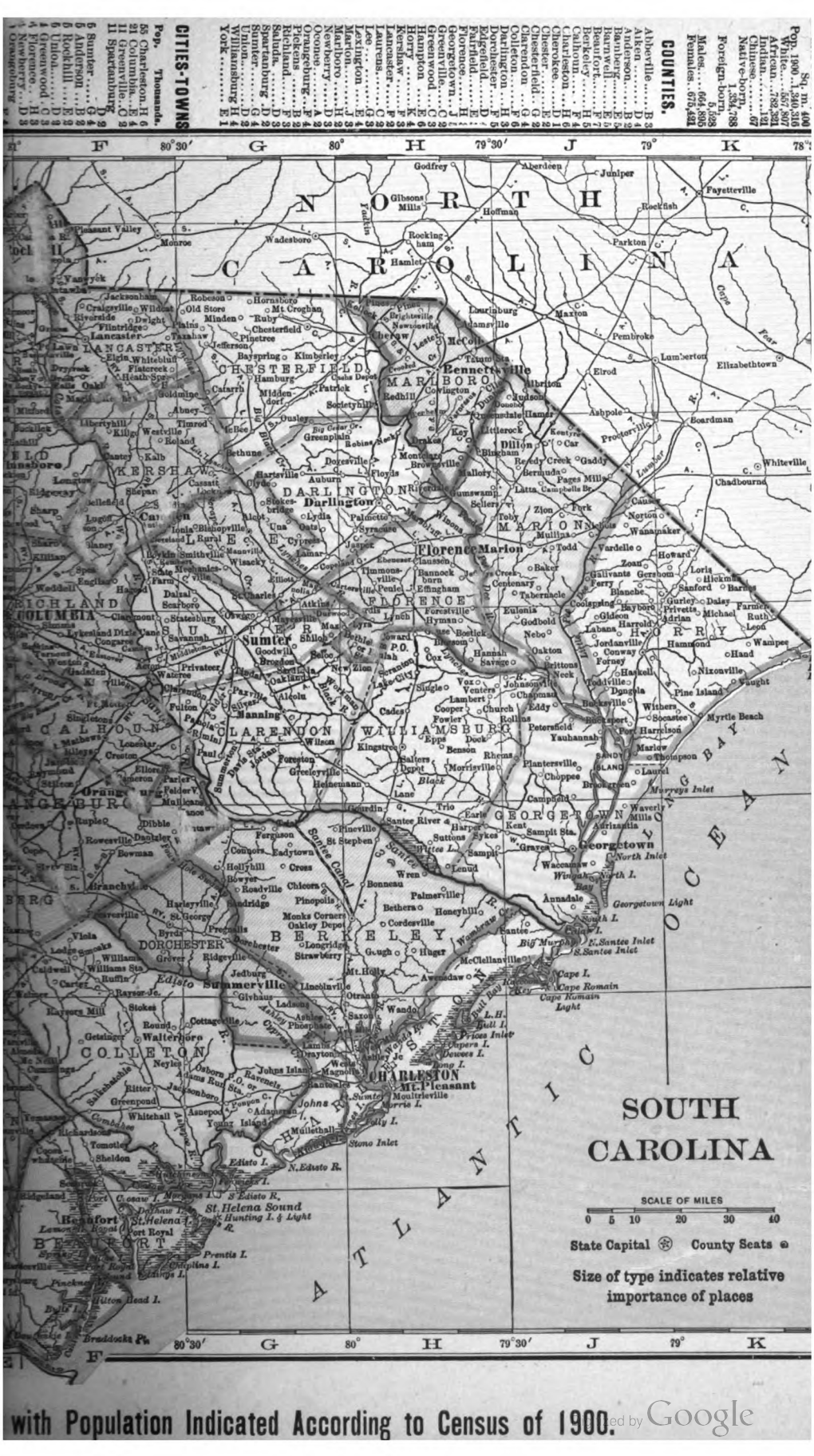


Willington..C 4
3 Carlisle.....E 2
3 Central.....B 2
3 Welford.....C 2
3 Springfield..E 4
3 Brunson.....E 6
3 Cameron.....F 4
3 Mt. Carmel..B 3
3 Ft. Motte.....F 4
3 Chesterfield H 2
? Fairfax.....E 6
2 Inman.....C 1
2 Bradley.....C 3
2 West Union..A 2
2 Ridgespring D 4
2 Saluda.....D 3
2 Hickory.....E 1
2 Helena.....D 3
2 Trenton.....D 4
2 Heath Spr....F 2
2 Troy.....C 4
2 Landrum....C 1
2 Hodges.....C 3
2 Hollyhill....G 5
2 St. Stephens H 5
2 Rowesville..F 5
2 Ellenton....D 5
2 Greeleyville H 4
2 Ridgeville...G 5
2 Harleyville..G 5
2 Lowndesville
B 3
2 Richburg....E 2
2 Swansea.....E 4
2 Coronaca....C 3
2 Summerton G 4
2 Donalds.....C 3
2 Foreston....G 4
2 Lamar.....G 3
2 Norway.....E 5
2 Ehrhardt....E 5
2 Calhoun....B 2
2 Elko.....E 5
2 Scranton....H 4
2 Woodford...E 4
2 Campobello..C 1
2 Monks Corner
H 5
2 Tatum.....H 2
1 Olar.....E 5
1 Simpsonville
C 2
1 Irmo.....C 3
1 Wagener....E 4
1 Waterloo....C 3
1 Chapin.....E 3
1 Glenn Spr...D 2
1 Blackstock..E 2
1 Graycourt...C 2
1 Verdery.....C 3
1 Blenheim....H 3
1 Trio.....H 5
1 Reidville....C 2
1 Peak.....E 3
1 Ulmers.....E 5
1 Sharon.....E 2
1 Duncans.....C 2
1 Dovesville..H 3
1 Parksville...C 4
1 Midway.....F 5
1 Reevesville..F 5
1 Wards.....D 4
1 Sieglingville E 5
1 Bowman.....F 5
1 Whitmires...D 2
1 Tirzah.....E 1
1 Ft. Lawn....F 2
1 Westville....F 3
1 Lucknow....G 3
1 Mountville..D 3
1 Gaston.....E 4
1 Dunbar.....H 2
1 Govan.....E 5
1 Travellers Rest
C 2
1 Ridgeway..F 3
1 Clarendon...G 4
1 Kline.....E 5
1 Littlerock...J 3
1 Nickols.....J 3
1 Vance.....G 5
1 Cope.....F 5
1 Sycamore...E 5
1 Livingston..E 4
1 Modoc.....C 4
1 Perry.....E 4
1 Kelton.....D 2
1 Springhill...E 3
1 Whiterock...E 3
1 Grover.....F 5
1 Chicora....H 5
1 Smyrna.....E 1
1 Jacksonboro G 6

Hammond's 8 x 11 Map of South Carolina
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General Map Showing Railroads and Principal Cities and To


Sq. m. 400
Pop. 1900 1,340,316
White 557,807
African 782,321
Indian 121
Chinese 67
Native-born 1,334,788
Foreign-born 5,528
Males 664,895
Females 670,421
COUNTIES.
Abbeville B 3
Aiken B 4
Anderson A 2
Barnwell B 5
Beaufort F 5
Berkeley E 6
Calhoun D 4
Charleston F 6
Cherokee A 3
Chester C 3
Chesterfield C 5
Colleton E 5
Darlington D 5
Dorchester E 6
Edgefield B 3
Fairfield C 4
Florence D 6
Georgetown G 6
Greenville A 2
Greenwood B 3
Hampton F 5
Horry H 6
Kershaw C 5
Lancaster C 4
Laurens B 3
Lee D 5
Lexington C 3
Marion E 6
Marlboro E 5
Newberry C 3
Oconee A 2
Orangeburg D 4
Pickens A 2
Richland C 4
Saluda B 3
Spartanburg B 2
Sumter D 5
Union B 4
Williamsburg E 6
York A 3
CITIES-TOWNS
Pop. Thousands.
Charleston H 6 55
Columbia C 4 21
Greenville B 2 11
Spartanburg B 2 11
Sumter D 5 5
Anderson B 2 5
Rock Hill A 4 5
Union B 4 5
Greenwood B 3 4
Florence D 6 4
Newberry C 3 4
Orangeburg D 4 4
Conway H 6 3
Darlington D 5 3
Georgetown G 6 3
Marion E 6 3
Camden C 5 2
Chester C 4 2
Cheraw D 6 2
Dillon E 6 2
Gaffney A 3 2
Greenville B 2 2
Laurens B 3 2
Lexington C 3 2
Marlboro E 5 2
Abbeville B 3 1
Aiken B 4 1
Barnwell B 5 1
Beaufort F 5 1
Bennettsville E 6 1
Bishopville D 5 1
Cheraw D 6 1
Chesterfield C 5 1
Clinton B 3 1
Conway H 6 1
Darlington D 5 1
Dillon E 6 1
Edgefield B 3 1
Georgetown G 6 1
Hampton F 5 1
Kingstree E 6 1
Lancaster C 4 1
Manning E 5 1
Marion E 6 1
McCormick B 4 1
Newberry C 3 1
Orangeburg D 4 1
Pickens A 2 1
Rock Hill A 4 1
Seneca A 2 1
Sumter D 5 1
Union B 4 1
Walhalla A 2 1
Williamston B 2 1
Winnsboro C 4 1
Yorkville A 3 1
F
80°30′
G
80°
H
79°30′
J
79°
K
78°
Godfrey
Aberdeen
Juniper
Payetteville
Gibsons Mills
Hoffman
Rockfish
Yadkin R.
Rocking ham
Wadesboro
Parkton
Hamlet
Pleasant Valley
Monroe
Jacksonham
Robeson
Old Store
Minden
Ruby
Hornsboro
Mt Croghan
Craigsville
Wildcat
Riverside
Dwight
Flintridge
Lancaster
Chesterfield
Jefferson
Pinetree
Bayspring
Kimberley
Hamburg
Patrick
Middendorf
Catarrh
Goldmine
Abney
Timrod
Kelly
Westville
Roland
Bethune
Kalb
Cantey
Sheran
Edgeway
Lugoff
Camden
Bishopville
Lydia
Oats
Una
Lamar
Jamison
Effingham
Florence
Marion
Timmonsville
Bannockburn
Penlee
Lynch
Forestville
Hyman
Godbold
Nebo
Oakton
Hannah
Savage
Prittons Neck
Johnsonville
Ventera
Chapmans
Eddy
Rollins
Petersfield
Yauhannah
Bucksport
Port Harrelson
Marion
Thompson
Laurel
Choppee
Brookgreen
Murrays Inlet
Waverly Mills
Georgetown
North Inlet
Winyah Bay
North I.
Georgetown Light
Annandale
South I.
Cajah I.
Big Murphy I.
N. Santee Inlet
S. Santee Inlet
Santee
Cape I.
Cape Romain
Cape Romain Light
L. H.
Bull I.
Prices Inlet
Capers I.
Dewees I.
Long I.
Sullivans I.
Charleston
Mt. Pleasant
Sumter
Moultrieville
Morris I.
Johns I.
Folly I.
Stono Inlet
N. Edisto R.
S. Edisto R.
St. Helena Sound
Hunting I. & Light
St. Helena
Port Royal
Prentis I.
Capers I.
Hilton Head I.
Broad R.
Coosaw R.
Coosaw I.
Parris I.
Ladies I.
Beaufort
Braddocks Pt.
Pocotaligo R.
Tullifinny R.
Combahee R.
Ashepoo R.
Edisto R.
Edisto Island
Jacksonboro
Adams Run
Bonneau
Moncks Corner
Pinopolis
Cordesville
Oakley Depot
Bethera
Palmerville
Honeyhill
Wando R.
Cooper R.
Goose Creek
Ashley R.
Ashley Phosphate
Magnolia
Drayton
Johns Island
Wadmalaw I.
Edisto Island
Yonges Island
Seabrook
Whitehall
Sheldon
Tomotley
Ritter
Greenpond
Asnepo
Adamsville
Mullinhall
Ashepoo
Combahee
Salkehatchie
Coosawhatchie
Pocotaligo
Tullifinny
Yemassee
Ridgeland
Hardeeville
Okatie
Switzerland
Lobeco
Port Royal Sound
Broad R.
Beaufort R.
Whale Branch
Harbor R.
Parris I.
Ladies

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TO

SOUTH CAROLINA, THE COMMONWEALTH,

TO

SOUTH CAROLINIANS

AND TO

THOSE WHO MAY BECOME CITIZENS

OF THE

PALMETTO STATE

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Publications of the Department of Agriculture, Commerce and Immigration.

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2. "Climatology of South Carolina": 1904.
3. "South Carolina—A Primer": 1904.
4. Map of State of South Carolina—1905.
5. Isothermic Map of South Carolina—1905.
6. Precipation Map of South Carolina—1906.
7. First Annual Report—1904.
8. Second Annual Report—1905.
9. Catalogue of Exhibit "Resources of South Carolina"—1905.
10. Catalogue of Exhibit "Resources of South Carolina"—1906.
11. "Zuid Carolina"—1905.
12. "Sud Carolina"—1905.
13. "South Carolina, U. S. A."—1906.
14. "De Tuin der Vereenigde Staten"—1905 (Agricultural).
15. "De Tuin der Vereenigde Staten"—1905 (Manufacturing).
16. "South Carolina" (Foreign)—1905.
17. Bulletin 1—Statistics—1906.
18. "The Granite Industry"—1906.
19. "The Garden Country"—1906 (Published in Scotland).
20. "The Trucking Industry of South Carolina"—1906.
21. Map of South Carolina—1907.
22. Third Annual Report—1907.
23. "The Story of King Cotton"—1907.
24. Water Powers of South Carolina—1907.
25. South Carolina—Her Resources Epitomized—1907.
26. Mineral Resources of South Carolina—1907.
27. The Cotton Mills of South Carolina—1907.
28. Midseason Cotton Report—1907.
29. "Handbook of the Resources of South Carolina"—1907.
30. Map of South Carolina—1908.
31. "The Williamson Corn Method"—1908.
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33. "Handbook of the Resources of South Carolina" (Second Ed.)—1908.

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CONTENTS.

CHAPTER I. The State of South Carolina.

CHAPTER II. The Story of the State.

CHAPTER III. How the State is Governed.

CHAPTER IV. The Climate—J. W. Bauer, Director of South Carolina Section United States Weather Bureau Service; E. J. Watson, Tourist Advantages.

CHAPTER V. Geology and Mineral Resources—Earle Sloan, State Geologist.

CHAPTER VI. The Water Powers of South Carolina—G. E. Shand, C. E.

CHAPTER VII. Education in South Carolina—A. R. Banks, Member State Board of Education.

CHAPTER VIII. Agriculture—1, General; 2, Cotton; 3, Trucking; 4, Rice; 5, Record Crops; 6, Silk Culture; 7, Tea Culture; 8, Tobacco; 9, Good Roads; 10, Miscellaneous.

CHAPTER IX. Horticulture—1, General; 2, Fruit Growing; 3, Pecan Groves.

CHAPTER X. Live Stock—1, General and Statistics; 2, Cattle and Hogs; 3, Dairying; 4, Cheesemaking; 5, Poultry; 6, Angora Goats and Sheep; 7, General.

CHAPTER XI. Manufactures—1, General Manufacturing; 2, Cotton Manufacturing; 3, Special Manufacturing.

CHAPTER XII. Commerce, Transportation, and Immigration and Emigration—1, Trans-Atlantic Service; 2, Coastwise Service; 3, River Service; 4, Railway Service; 5, Immigration, its History and its Present Condition.

CHAPTER XIII. Population.

CHAPTER XIV. Hunting and Fishing.

CHAPTER XV. Forestry and the Timber Industry—A. C. Moore.

CHAPTER XVI. The Principal Cities—1, Charleston; 2, Columbia; 3, Greenville; 4, Spartanburg; 5, Newberry; 6, Sumter; 7, Orangeburg; 8, Rock Hill; 9, Chester; 10, Greenwood; 11, Georgetown; 12, Beaufort.

CHAPTER XVII. The State by Counties.

CHAPTER XVIII. Statistics and General Information not Otherwise Classified.

CHAPTER XIX. The State at Expositions and Hand-Books.

Maps—State, Geological, Climatological, Precipitation, Mineral, Congressional Districts, Judicial Circuits, Textile Manufacturing.

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South Carolina Pictured By The Poet

ONE OF HER SONS

Nor lack there pastures rich and fields all green
With all the common gifts of God,
For temperate airs and torrid sheen
Weave Edens of the sod;
Through lands which look one sea of billowy gold
Broad rivers wind their devious ways;
A hundred isles in their embraces fold
A hundred luminous bays;
And through yon purple haze
Vast mountains lift their pluméd peaks, cloud-crowned;
And, save where up their sides the plowman creeps,
An unhewn forest girds them grandly round,
In whose dark shades a future navy sleeps!
Ye Stars, which, though unseen, yet with me gaze
Upon this loveliest fragment of earth!
Thou Sun, that kindliest all thy gentlest rays
Above it, as to light a favorite hearth!
Ye Clouds, that in your temples in the West
See nothing brighter than its humblest flowers!
And you, ye Winds, that on the ocean's breast
Are kissed to coolness ere ye reach its bowers!
Bear witness with me in my song of praise,
And tell the world that, since the world began,
No fairer land hath fired a poet's lays,
Or given a home to man!

—*Henry Timrod.*

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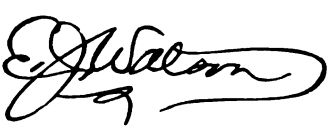
FOREWORD

IN ORDER that the people of the world may be advised of the matchless resources of South Carolina, may be made acquainted with the wonderful story of progress that has characterized the course of events since the scourge of civil war has passed, may know of the rare opportunities open to energetic men and women who are in search of homes and happiness and wealth, this volmme has been prepared and issued in accordance with the wishes of the General Assembly of the State. South Carolina is rapidly restoring her agricultural prestige to the imperial position it occupied a half century ago, and her record in the industrial world in the period since industrial development began, less than two decades, has perhaps never been equaled in the history of the world.

In the preparation of the contents of this volume the greatest care has been taken to secure absolute accuracy of statement. The statistics have been prepared in close cooperation with the Federal statisticians. The several chapters have been designed to set forth the information that the honest seeker for facts desires. Many things that should properly be contained in a volume of such broad scope and purpose have from the necessity of the case been omitted. This is the first general handbook of South Carolina issued since 1882, and, therefore, the task of selection and condensation of valuable data has been difficult of execution.

Much of greatest interest historically it has been impossible to even summarize, and the aim has been only to give enough of history to indicate the development upon the many lines of endeavor which have commanded the attention of our citizenship.

With the above announcements this volume is sent forth in the expectation that it will serve its purpose and serve in some measure to acquaint the world with South Carolina's possibilities, to the end that the State may speedily become what by nature she was intended to be, the garden country of America.



Commissioner.

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LEADS THE WORLD

SOUTH CAROLINA LEADS THE WORLD IN THE FOLLOWING RESPECTS:

Grower of cabbages—Norman H. Blitch, Meggett. One thousand acres. Began a poor man, working for small wages in 1891. It costs $110,000 to cultivate his crop.

Shipper of cabbage plants—Wm. C. Geraty, Yonge's Island. Ships 40,000,000, worth $35,000. Has booked 100 cars, 100,000,000 plants, for this year's delivery. Began poor.

Pecan grower—John S. Horlbeck, Mount Pleasant. Main grove, 600 acres; two smaller groves with 10,000 trees each. Annual production, ten tons.

Cotton mill under one roof—Olympia Mills, Columbia. Has 11 acres of floor space, and 105,000 spindles.

In the production of upland cotton per acre—four bales.
In the quality of sea island cotton.
Yield of corn per acre as demonstrated in world contests.
Yield of rice per acre.
Yield of oats per acre.
In the use of transmitted electric power for cotton mill drive.
In the tensile strength of granite.

LEADS THE UNITED STATES

In the production of tin.
In the yield of corn per acre.
In the yield of oats per acre.
In the yield of rice per acre.
In the yield of cotton per acre.
In the value of sea island cotton per pound.
In the production of tea, possessing the only commercial tea gardens in America.
In the use of water power, and transmitted electric power for textile plants.
In the cheapness of the cost of living.
In climatic conditions, which are only equaled by those of Southern France.
In the production of gold (east of the Rockies).

LEADS THE SOUTHERN STATES

In textile manufacturing.
In production of corn, oats, rice and cotton per acre.
In value and yield of hay, per ton.
In water power—developed and undeveloped.
In cheapness of cost of living.
In establishing direct export and import trade and trans-Atlantic passenger service.
In production of gold and tin.
In production of kaolin.
In climatic conditions.
In variety of opportunities for the home-seeker.
In rapidity of industrial development.
In the manufacture of fertilizers.
In harbor facilities, depth of water on bar and accessibility considered.
In rapidity of development of the trucking industry.
In extent of cheese manufacturing.
In size of bleachery.
In the strength of her granite.
In the manufacture of paper pulp.
In welfare work in her cotton manufacturing districts.

RANK IN THE UNITED STATES

South Carolina, among the States of the American Union, ranks:
Second—In cotton manufacturing.
Fourth—In the manufacture of commercial fertilizers.
Fifth—In the canning industry.
Fifth—In the manufacture of hosiery.
Fifth—In production of raw cotton.

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CHAPTER I.

THE STATE OF SOUTH CAROLINA.



SOUTH CAROLINA—what memories of a glorious past the name recalls, what a splendid present it signifies, and what a glorious future it portends! South Carolina has ever been a leader in all things that have served to make the nation the great world-power that it is today, and South Carolina has never ceased to be such. Today the little State that is the keystone of the South Atlantic seaboard is, while bereft of effective political power in the affairs of the nation, still a power in the shaping of the policies of the country. It is not my province to write of the glorious part that the country has played in American history, but rather to tell truthfully of the natural advantages of the State, to show why this State must become one of the greatest centers of commercial, industrial and agricultural activity on the American continent. The present situation gives ground for prophecy and fulfilment, and the plain, unvarnished truth is all-sufficient.

Some one has remarked that "The State is the product of its people." If this be true, South Carolina is indeed a great State, for her people have ever been conceded to be, from the standpoint of inate ability, of bravery, of chivalry, of unselfish patriotism, and of purity of character, the equal, if not the peer, of any on the American continent.

From the earliest days a just pride of origin has animated the people of the State. High ideals and ambitions have controlled their actions, and for pure Americanism none today rank higher.

Enured to personal hardships, but jealous of their honor and of their State's honor at all times, the people of South Carolina have ever and always endeavored to seek the good of the American commonwealth. They have not, however, been unmindful of the bounteous gifts of the Creator, and they realize the immense value of the natural productiveness of soil, climate and mineral resources that has been showered upon them. They have attempted the development of these wonderful resources as best they could under most adverse circumstances—circumstances that tried men's souls—but to this day the surface has merely been scratched, when all the possibilities are taken into consideration. That an era of prosperity, such as the world has never seen, is opening to South Carolina, South Carolinians and those who will soon become South Carolinians is a fact that no man with a knowledge of the commercial and industrial strategic importance of the State can deny.

Up to this time South Carolina,—from the Colonial period on,—has been furnishing other South Atlantic States with the backbone of their civilization—sending sturdy, honorable men to them. Note this from McCrady's History: "The extent of emigration from South Carolina is not generally realized. It is not generally known that she was one of the great emigrant States. 'Yet from 1820 to 1860,' says General Francis A. Walker, in his introduction to the United States Census of 1880, 'South Carolina was a beehive from which swarms were continually going forth to populate the newer cotton-growing States of the Southwest.' The whole population of the State in 1860 amounted to 470,257. There were then living in other States 193,389 white persons born in South Carolina. That is, two-fifths of the whole native-born population had

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emigrated and were then living in other States, and these almost entirely in Georgia, Alabama, Mississippi, Louisiana, Florida and Texas. In 1870, out of 678,706 native-born South Carolinians, more than one-third, about 246,066, were living in other States."

From this does it not appear that South Carolina has had something to do with making the South the standard of true Americanism that she is today?

As early as 1716, in the memorial presented on behalf of the Province of Carolina in London by Mr. Berresford, the following was contained, which is as true today as it was then: "Carolina being thus circumstanced and capable of affording greater quantity of valuable produce than any other part of British America, as the best of rice in abundance, all manner of timber for building, shipping in great plenty, pitch, tar, turpentine, rosin, indigo and silk, which has been manufactured in London and proves to be of extraordinary substance and luster, omitting to mention the great quantity of provisions and



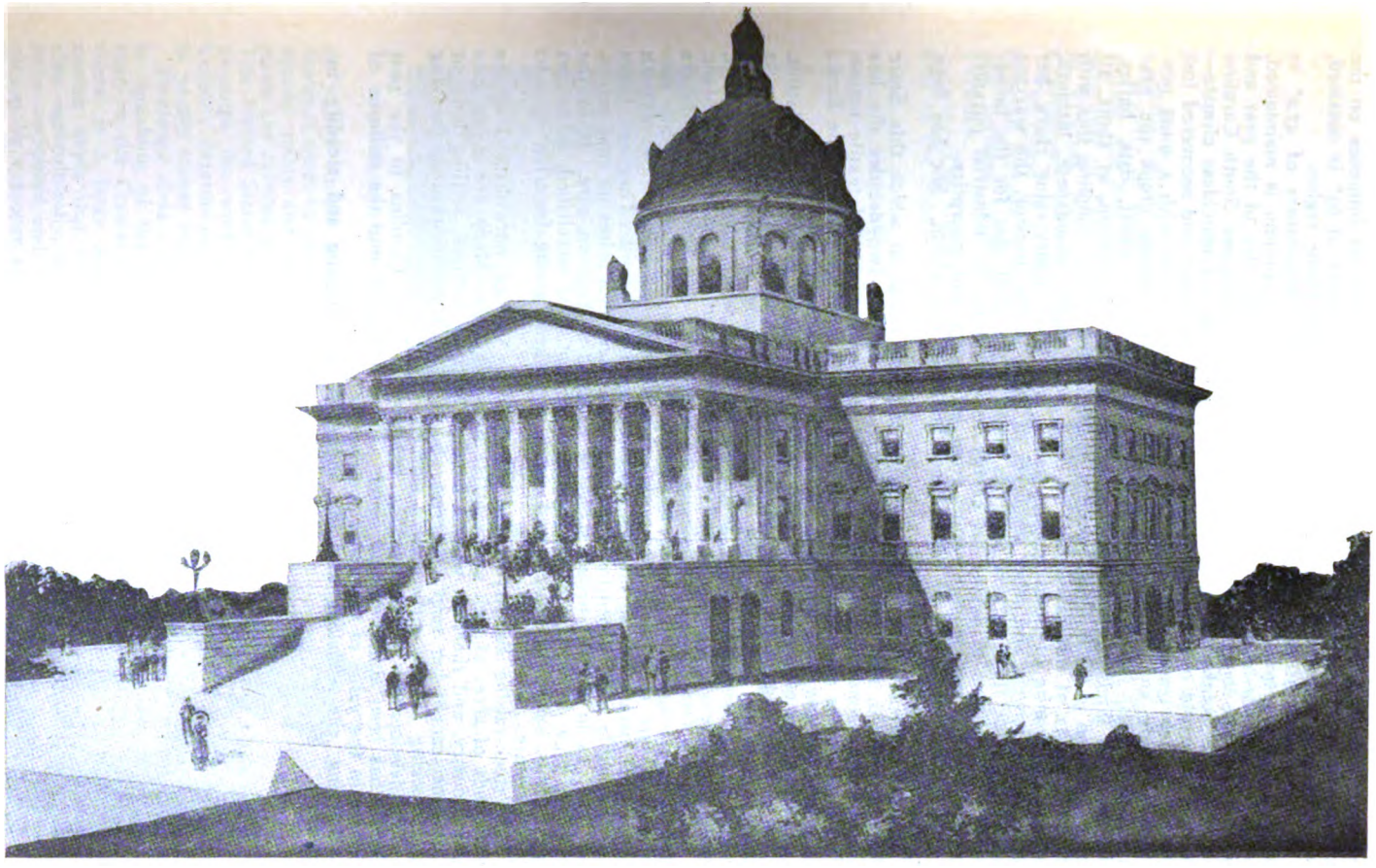
THE STATE CAPITOL—FROM MAIN STREET, COLUMBIA.

other necessaries it affords a plantation, 'tis humbly hoped the King and Parliament will be of opinion that it merits a particular notice and protection. The colony being capable of producing sufficient quantities of many of the aforesaid commodities, not only to supply Great Britain, but several other parts of Europe, the first of which being paid for in British manufacturies, and the whole freight redounding to his Majesty's subjects, are circumstances worthy of the notice of the Legislature."

More than a century—nearly two centuries—later the Secretary of Agriculture of the United States, Mr. James Wilson, after riding across South Carolina from coast to mountains, remarked: "No section of the world offers such inducements for diversified farming," and he predicted a future for the section such as has not been witnessed before in this country.

In the light of such testimony, and as a result of present-day experiences of energetic men, determined to win success, it is safe to say that South Carolina may be considered the garden spot of the Atlantic coast country and the ideal location for the home-seeker. The State is in the shape of an isosceles triangle, protected on its northern side by the towering walls of the Blue Ridge mountain chain, while on the east, the coast line, the tempering Gulf stream

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THE STATE CAPITOL.

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makes its inward bend on its way to the British Isles, its influence on the climate being so marked that an annual mean temperature of 65° is obtained, it never being greater than 50°, even in the extreme alpine region.

In the center of the triangle an unvarying mean temperature of 47.2° in winter, 63.4° in spring, 76.4° in summer, and 63.9° in autumn is maintained, with ten and one-half hours of daylight on the shortest day of the year and fourteen on the longest. With such meteorological conditions, South Carolina is easily the Southern France of America. Coupling this matchless climate—known the world over through the scores who have sought and recovered lost health at such resorts as Aiken, Camden and Summerville—with a most productive, sandy and porous soil, capable of growing money crops the year through—cotton, indigo, tobacco, sugar, tea, rice, corn, wheat, oats, barley, fruits of all kinds of finest quality, truck of every description, in short, all crops common to the different portions of the United States—coupling this with rarest deposits of minerals—gold, tin, iron, lead, copper, manganese, bismuth, aluminum—granite of finest quality, kaolin and other money-value clays, her great water powers and other resources of value to the investor, the warrant is apparent for the assertion that this State is the ideal spot for the home-seeker who wishes to devote his energy to agriculture or industrial pursuits or the investor seeking sure results from his energy and enterprise.

South Carolina is one of the original States of this Union. She has been primarily an agricultural State.

Note the tabulated statement herewith of those things in which this State leads the world, and the Southern States. In the last two decades she has leaped into second place in the United States in the matter of textile manufacturing; in the production of gold she is leading all the country of the East; in production per acre she holds all world's records worth the while.

The tendency of the negro is to the trades in the great centers of population. This is following in the wake of the education of the race. This State is today aiding the negro in these lines by maintaining a mechanical college, where he is given such training, preferring intelligent white labor on the farms, with their intensified methods, and aiding in the solution of a great problem.

Diversified farming is now claiming the attention of this State's best farmers and landowners, and they want European, eastern and western methods employed. Hence they invite the sturdy white settlers to come and share with them what nature has so lavishly bestowed upon their land. They ask them to come while undeveloped lands may be had at minimum prices on easy terms, and not, as in thickly settled strips of country, at $150 an acre. It is the province of a department of the State government, just established, to collect these lands, locate the settlers, and watch over them, giving fostering care to their welfare.

The stock-raising industry is now merely in its infancy, notwithstanding the thousands of acres of rich and valuable meadow lands. Many are going into this industry, and the man who is familiar with its methods, settling here at this time, cannot but reap a harvest. So it is with poultry-raising, dairying and trucking for the early eastern markets.

The development of the trucking industry in South Carolina in the past decade has been almost beyond belief. Today it reaches into the millions of dollars in the value of the annual production.

Dairying, cheese-making and like industries are thriving and steadily increasing.

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CHAPTER II.

THE STORY OF THE STATE.

South Carolina could be termed "the original" State of the United States, if priority of settlement on the continent of North America were to be considered, the first settlement having been on May 27, 1562, on the southeastern extremity of Paris Island, Port Royal Harbor, by the Huguenots. Jamestown, in Virginia, was settled in 1607; Plymouth, in Massachusetts, in 1620, and Charlestown, in South Carolina, in 1670.

The State is in the South Atlantic Division of the United States. It lies between latitude 32 degrees 4 minutes 30 seconds and 35 degrees 12 minutes N., and between longitude 1 degree 30 seconds and 6 degrees 54 minutes W. (Wash.).

Area.—The United States has finally adopted the following figures as the area of the State:

Square miles water	494
Square miles land	30,495
Total	30,989



CONFEDERATE MONUMENT.

The first map of South Carolina was printed in 1757 by W. G. DeBrahm, who estimated the area of the State at 33,760 square miles. In 1771 James Cook and in 1775 Henry Mouzon published in London maps of the State, from which both Ramsey and Drayton estimated the area at 24,080 square miles. A map, provided for by the State and made at considerable expense, was published in 1822, and in 1825 Mills' large atlas of South Carolina was completed and published and is regarded as perhaps the most accurate map even to this time. Mills placed the area of the State at 30,213 square miles. The United States Census in 1870 placed it at 34,000 square miles and the Census of 1880 gives the acreage at 30,170 square miles. The United States has, however, finally, through the work of the Bureau of Census, determined that the total area is 30,989 square miles.

Drainage Area.—It is worthy of note, in speaking of the area of the State, that in the Coastal Plain of this State there is a large area of swamp and marsh lands that are extremely valuable agriculturally, which areas can be fully reclaimed and brought into cultivation by a proper system of drainage. This swamp area in South Carolina as a whole is stated by United States experts, who have examined the territory.



HAMPTON MONUMENT.

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to embrace 1,750,000 acres. There is a bill now pending in Congress providing for the reclamation of such lands, and at this moment there is every indication that the bill will be enacted into law. The cost of drainage reclamation will not exceed, according to official estimates, more than $5 or $6 per acre, and it is estimated further that these lands, once reclaimed, would have an agricultural value of from $50 to $200 an acre. During the past few years, through the medium of State legislation and county work, utilizing convict labor, very effective reclamation work has been done under direction of the Charleston Drainage Commission. Soil experts say that these lands, when reclaimed, will be perhaps the most fertile in the entire State.

History.—In the space available in such a volume as this, only a brief resumè of South Carolina's history, so ably dealt with by Ramsey, Mills, McCrady and others, can be given; however, valuable historical bits are found in connection with the treatment of the several chapters. Hammond summarizes South Carolina's history in a sketch of the State prepared by him for the *Encyclopedia Americana* and published by permission under the title, "South Carolina—A Primer," by the South Carolina Department of Agriculture, Commerce and Immigration in 1904. What is here given is a reproduction of this condensed sketch, with some notes and addenda.



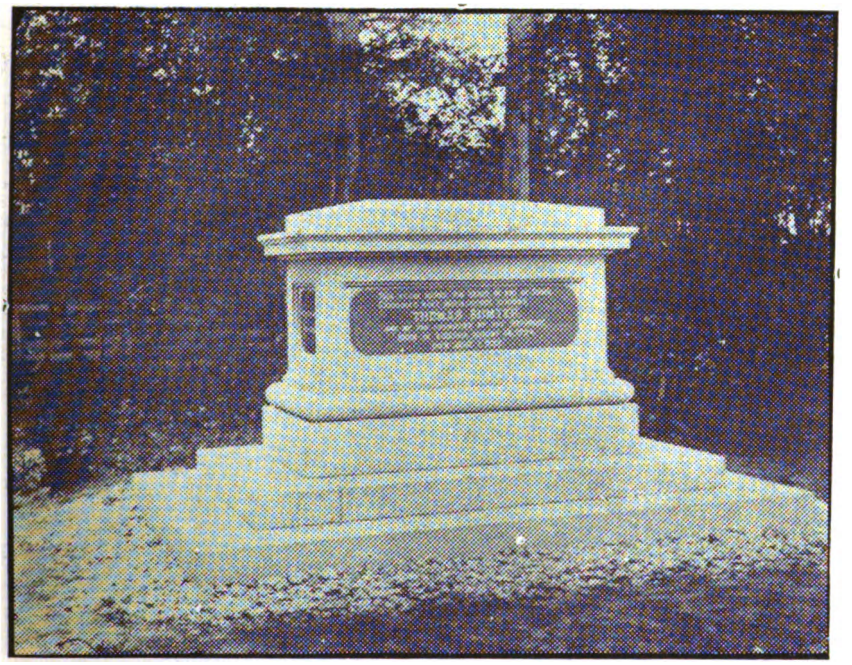
TRINITY CHURCH WHERE GEN. WADE HAMPTON IS BURIED.

When the first settlement on the North American continent, referred to above, was made by the French Huguenots on Paris Island in 1562, the colonists erected a fort, naming it, in honor of their king, Charles IX., Carolina (aboriginal name, Chicora). Their ships having returned to France for reinforcements, a fire broke out, which destroyed their barracks and magazine. In this plight they constructed boats, with the assistance of the Indians, and went back to France.

The English.—In 1665-69 Charles II., of England, claiming Carolina by reason of the discovery of North America by John Cabot in 1497 when sailing under a patent from Henry VII., granted all that "tract of ground" in America between the thirty-sixth degree and thirty-first degree north latitude, and to the west as far as the South Seas (Pacific Ocean), to eight English noblemen as Lords Proprietors. The grant covered about 1,020,000 square miles, or more than one-third the area of the present United States, a region since largely peopled from the South Carolina of today. The first colony sent out landed in 1670, as the French had, at Port Royal, but removed shortly after to the confluence of the Ashley and Cooper Rivers, where they founded the city of Charleston.

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The Proprietary Government was conducted under a royal charter and certain "Fundamental Constitutions" drawn for that purpose by the famous metaphysician, John Locke. In order to avoid "erecting a too numerous democracy," Locke designed a territorial aristocracy of landgraves, caciques, and barons. The colonists, however, insisting upon the clause of the king's charter directing the Lords Proprietors to "govern according to their best discretion by and with the advice, assent and approbation of the Freemen of said territory, or their deputies or delegates," prevented from first to last this aristocracy from taking root in the colony. The Proprietary Government, without adaptability to the circumstances and necessities of the colony, prompted endless discussions and dissensions as to the interpretation of the charter and the "Constitutions." A succession of "heats and broils" during forty-nine years culminated in 1719. The Proprietors expressed their inability to aid the colonists, refused petitions addressed to them on important matters, and repealed acts of the Assembly laying taxes for the discharge of the public debt, and for the freedom of elections. The Assembly thereupon voted itself a convention, and unintimidated



MONUMENT TO GEN. SUMTER.

by the threat of the Proprietary Governor to bombard Charles Town from a British war vessel, elected James Monroe governor in the name of the king, and the Royal Government of the Province supplanted that of the Proprietors.

Indian Populaiton.—Bancroft and Dana place the highest estimate of the aborigines south of the Great Lakes and east of the Mississippi River at 180,000, or one person to 4½ square miles, a territory now supporting a population of sixty-seven to the square mile, or 301 for one Indian. John Lawson, 1703, and Governor Glen, in 1743, agree in estimating the Indian population of Carolina at about one to eight square miles. They were generally friendly to the colonists except when incited to sudden outbursts of hostility by the Spaniards, the French, or the British, and formed a more or less important contingent in war, as when James Moore, in 1702-03, invaded the Appalachian region with twenty-five whites and 1,000 Indians and returned with 1,300 captives, who were sold into slavery to the northern colonies and the West Indies.

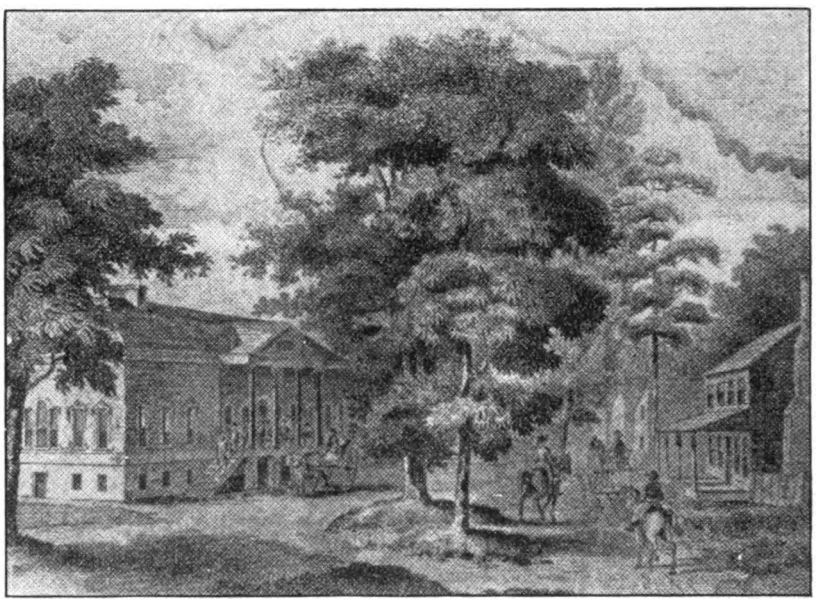
Negroes and Slavery.—Negro slaves were introduced from the Barbadoes in 1671, and were counted to be 12,000 in number at the close of the Proprietary rule in 1720. They were instructed in the Christian religion, and some of them taught to read. It was required of each white militiaman that he should train and arm a negro to accompany him in war. The white population had increased

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from 391 in 1671 to 9,000 in 1720, living chiefly in proximity to Charles Town.

Early Agriculture.—While the Indians lived principally on game and fish, cultivating only two plants, corn and tobacco, both exotics, the white colony never suffered for subsistence. They got thirty to eighty bushels of corn from an acre, deer supplying meat; an Indian hunter would for $25 a year furnish a family with 100 to 200 deer, besides wild turkeys, fish, etc. The culture of rice was introduced in 1693, and the export of this cereal in 1720 amounted in value to £3,350 sterling. The Proprietors refused in 1674 to send out cattle to the colonists, saying they wanted them to be "planters and not graziers," but seven years later they had so increased that many planters had 700 to 800 head. The Assembly had to appoint commissioners to dispose of unmarked animals, and passed a law for the inclosure of crops, which remained in force until 1882.

Trade.—As early as 1700 Charles Town had a large and lucrative trade with Indians in furs and hides, extending 1,000 miles into the interior, and a large export trade in forest products, timber, pitch, turpentine and provisions to the northern colonies and the West Indies. In 1748 there were 600,000 deer skins, valued at $180,000, shipped from Charles Town.

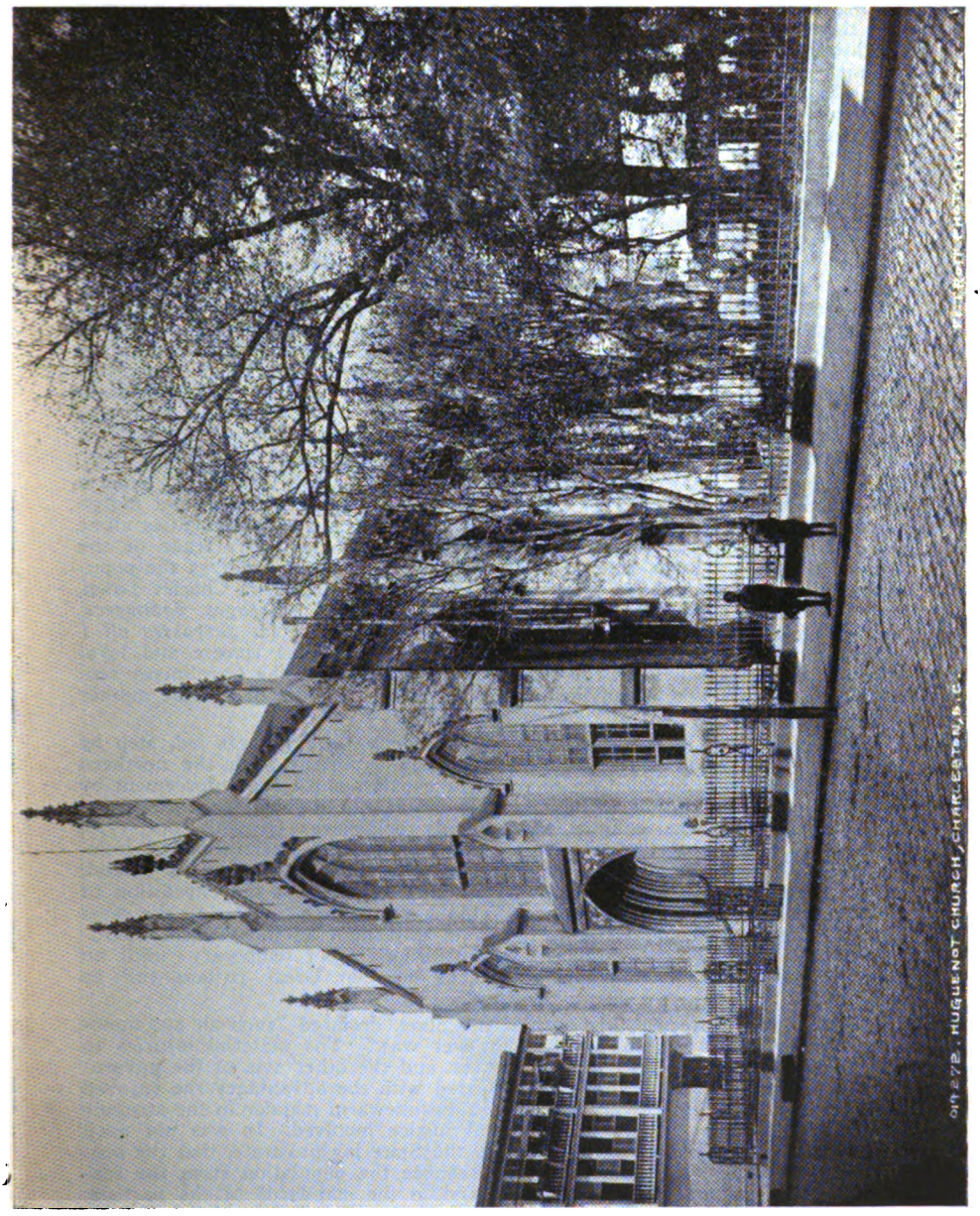


THE OLD STATE HOUSE.

Religion.—Religious freedom was secured, while the ministers of the Church of England were supported from the public funds. The various church members stood as follows: Episcopalians, 42 per cent.; Presbyterians and Huguenots, 45 per cent.; Baptists, 10 per cent.; Quakers, 3 per cent. A free public library was established in Charles Town in 1700, and a free school in 1710. In 1712 a digest of the English and colonial laws was prepared by Chief Justice Trott. In 1717 a successful war was waged against the pirates infesting Cape Fear, and a number of them captured and executed. A duty of £30 a head was laid on the importation of negroes.

Kings George I. and II.—George I. and George II. were nursing fathers to Carolina. The Assembly was convened, all actions at law on account of the change of government were declared void, and the judicial proceedings under the provisional administration confirmed. Treaties were made with the Indians, who had hitherto stood as independent neighbors and were now constituted allies or subjects. Parishes were laid out, and whenever settled by 100 families, they were allowed representation in the Assembly. To relieve the burden on the country people of repairing for the trial of all causes to the General Court at Charles Town, county and precinct courts were established.

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THE HISTORIC HUGUENOT CHURCH IN CHARLESTON.

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Schools.—Schools were established in each precinct and £25 levied by the justices to assist in the yearly support of the teachers, who were required to teach ten poor children free of charge. Between 1733 and 1774 over 200 tutors, schoolmasters or schoolmistresses were engaged in the Province. The King, having bought out the Proprietors for £17,500, purchased also the quitrents due them by the colonists, and remitted them. Charles Town was the extreme southwestern outpost of the British in America. As late as 1741, when the Spanish possessions lay embosomed on the Gulf of Mexico, with Saint Augustine, the oldest fortified place in America, the French claimed all the territory lying west of a line starting from a point north of Charles Town, reaching the Appalachian Mountains, running round the headwaters of the Potomac, across the Mohawk and Hudson, down Lake Champlain, and by the Sorrel River to the Saint Lawrence. With little aid from the mother country, the colonists had stood the advance guard against the warring Europeans and held them, the American savages, the African savages imposed upon them, and the pirates in check.

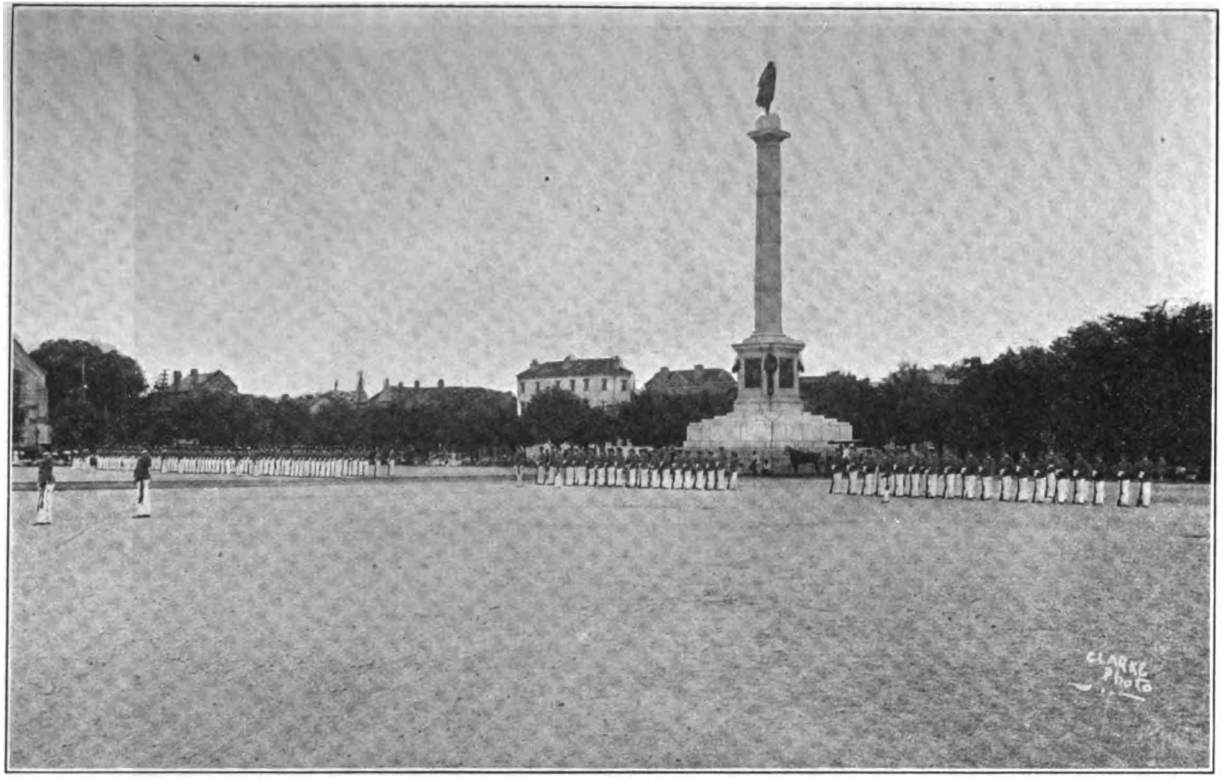
European Settlers.—The first settlers had confined themselves to the neighborhood of Charles Town. Now the settlement of Georgia, 1732-34, protected the western frontier, and the interior of Carolina received many immigrants, Germans, and after Culloden many Scotch came into the middle sections, and, on Braddock's defeat, refugees from Virginia and Pennsylvania followed in the Piedmont region. Land was granted free of charge for ten years, and after that the annual rental was four shillings sterling for 100 acres. Great Britain imposed restrictions on the commerce and domestic manufactures of her colonies. While this was prejudicial to the more northern colonies, it did not affect an agricultural people like the Carolinians.

Commerce.—The restraint imposed by the navigation acts on colonial exports was removed on the export of Carolina rice. The exports of rice and indigo reached £108,750 in 1747. In 1775 the exports of these two commodities alone were valued at £1,000,000 sterling, a third of what the entire trade of the American colonies was estimated at in 1768. Between 1725 and 1775 the population increased sevenfold. In 1773 Josiah Quincy, writing from Charles Town, says of the city: *"In grandeur, splendor of buildings, equipages, commerce, number of shipping, and, indeed, in almost everything, it far surpasses all I ever saw or expected to see in America."* With the most sincere and loyal attachment to Great Britain, the king and his government, the Carolinians sent their children to England and Scotland to be educated, and spoke of the mother country as "home."

The Revolution.—In the midst of this prosperity Carolina was led, step by step, during a period of eleven years, through sympathy with the northern colonies for injuries inflicted on them, to take part against the enforcement by Great Britain, of taxation without representation, not desiring or anticipating the separation from that country, which finally took place. On 28th June, 1776, while the Congress of the colonies were discussing the Declaration of Independence, Colonel Moultrie, from the Palmetto Fort on Sullivans Island, repulsed with heavy loss the English fleet, and turned back the expedition of Sir Henry Clinton for the invasion and subjugation of the South. In the same year Carolina was the first colony to frame and adopt an independent constitution, but with the proviso that this constitution is but temporary "until an accommodation of the unhappy differences between Great Britain can be obtained."

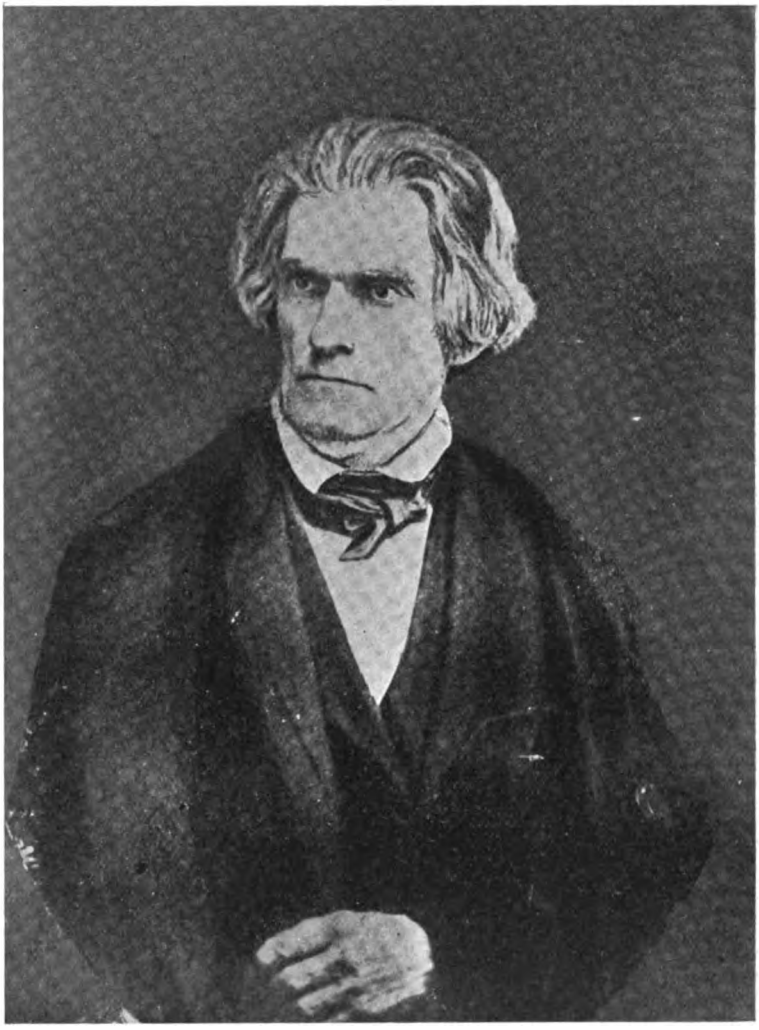
In 1778, John Rutledge, Governor of the State, declared "such an accommodation an event as desirable now as it ever was." The material injuries to Carolina by the Stamp Act, the duty on tea, and the other acts of the government of George III., were slight as compared with the advantages she enjoyed under English rule, but she had enlisted in no lukewarm manner in the struggle on account of the principles of right and justice involved. In was not until after the fall of Charleston, in 1780, when the State lay prostrate, that the outrages of the British armies roused to resistance the population from the seaboard to the mountains. They then flocked to the standards of the partisan leaders, Marion, Sumter, Pickens and others, and so harassed and delayed the northward movement of Cornwallis to join Clinton that Washington and Lafayette were enabled to unite in Virginia and force the British into Yorktown. There, blockaded by the French fleet under DeGrasse, they were compelled to surrender, and the war virtually terminated in favor of the Americans. Carolina contributed $1,205,978 above her quota to this war—only a few thousands less than Massachusetts, whose war the Revolution was, and who never suffered from invasion—and more than all the other eleven colonies together.

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THE CALHOUN MONUMENT IN CHARLESTON.

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JOHN C. CALHOUN.

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A Glorious Record.—One hundred and thirty-seven engagements with the British took place within her borders. In 103, Carolinians alone fought, in twenty others they had assistance, and fourteen, including Camden, were fought by troops from other colonies. *"Left mainly to her own resources,"* says Bancroft, *"it was through the depths of wretchedness that her sons were to bring her back to her place in the republic after suffering more, daring more, and achieving more than the men of any other State."*

After the Revolution.—The eight years of war were followed by eight years of distress and disorganization. The country had been laid waste, churches burned, and industries paralyzed. It was estimated that the British had kidnaped 25,000 slaves and sold them. They plundered the planters' homes. Bancroft says they pillaged of plate alone to the value of £300,000. After the fall of Charleston there arose a fourteen-years' dispute between the army and navy engaged in the siege as to their respective shares of the plunder. On 9th August, 1787, Carolina ceded to the United States her lands (10,000 square miles) not lying within her present boundaries.

Constitution Ratified.—On 17th September of the same year she ratified the Constitution of the United States. In 1790 the seat of government was removed from Charleston to Columbia, in the center of the State, and another Constitution substituted for that of 1776. An amendment in 1808 fixed the number of representatives at 124, allowing one representative for each sixty-second part of the white inhabitants, and one for each sixty-second part of the taxes raised by the Legislature. The Senate to be composed of one member from each election district, except Charleston, which was allowed two. This accentuated the differences already existing between the peoples of the lower and the upper country. The former being the outgrowth of the city life of Charleston, and the first settlers, preponderated in wealth. The other, arising from numerous and separate centers of rural settlement, had the larger and more rapidly increasing number of white inhabitants.

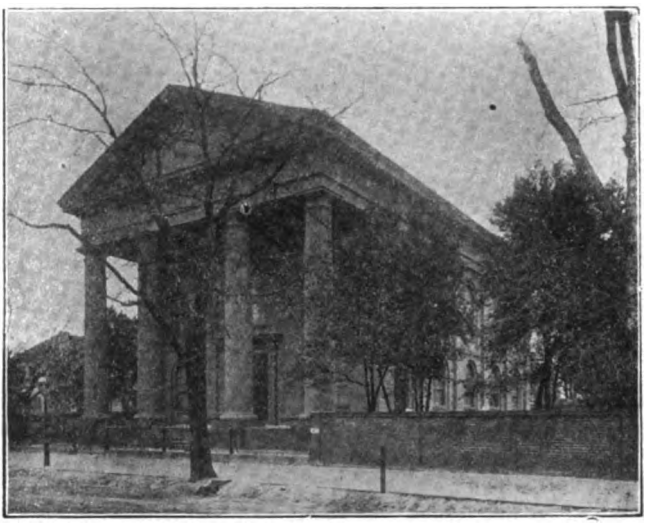
The First Tariff.—The first tariff act of 1789 imposed an *ad valorem* duty of 5 per cent. on imports (with a few specific duties of 15 per cent.) for the support of the Federal government. This was in addition to the taxes raised by each State for its own purposes. It was much higher taxation than under the colonial government, which required in ordinary times only a duty of 3 per cent. on imports, with an export duty of 3d. on hides. Four years later the tariff was raised to 10 and 20 per cent. Ten years after, duties were increased 2½ per cent. in aid of the Mediterranean Fund against the Barbary powers. Double war duties, amounting to 25 to 40 per cent., were imposed in 1812. In 1816 a tariff protecting the industries that had been found necessary but deficient during the later war, fixed duties at 25 per cent., to be reduced to 20 per cent. in 1820. The Carolina representatives supported this not unreasonable protection. The reduction never took place, and at this the Carolina representatives protested. Disregarding their protest, a tariff imposing 12 to 50 per cent. duties was passed in 1824. Again, in 1828, without regard to the complaints of the Carolina farmers, who were being forced to contribute to the manufacturing profits of other States, a tariff raising duties 25 to 50 per cent. was enacted. Wearied with unavailing remonstrance, a convention of the people of Carolina was called in 1832, which declared the protective tariff law unconstitutional, null and void. To meet this action of the State, Congress passed the Force Bill in 1833 for the collection of customs. In the same month of the same year Congress passed "the Clay Compromise Act" for a gradual reduction of duties until 1842, when they should reach a 20 per cent. level. This restored tranquility, although for the second time the promised reduction was never fully realized.

Slavery.—Coincident with the tariff, another and more serious source of disturbance arose. In 1775 slavery extended over North America from Canada to Florida, inclusive. It had been introduced by Queen Elizabeth and James II. In 1772 there were freed 14,000 negro slaves, who were owned and living in England, and belonged to the Royal African Company for trading in negro slaves. Now it began to be looked upon with horror, as something strange and foreign to human instincts. The New England Anti-Slavery Society was formed in 1832. In less than four years more than 100,000 persons had joined anti-slavery societies in the Northern and Western States. They demanded of Congress that "all slaves should be instantly set free without compensation of the owners." They declared "we will give the Union for the abolition of slavery." The lesson was taught far and wide that the slaveholders of the South, "a few arrogant, domineering, self-constituted aristocracy," were—through the repre-

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sentation allowed them "in proportion to the number of their slaves"—ruling the work-people of the North and denying their industries the protection due from the Federal Government. They declared that "the country must become all free or all slave." The non-slaveholding whites of the South were as violently opposed to the emancipation of the negroes as their brethren of the North were in favor of it. To them it meant industrial, political and social equality with a people in their midst whom they deemed inferior to themselves. They did not ask for aid to their industries through Federal taxation and did not see why Northern manufacturers should.

Conditions in 1860.—In 1860 South Carolina stood third among the States in the per capita wealth of her people. Connecticut stood first and Louisiana second. It had risen from $431 in 1850 to $779 a head in 1860, against an average of $501 for all the States. Taxation, not national, was $1.85 per capita, against an average of $2.95 for the other States. The tariff had been reduced in 1857 below 20 per cent., which was lower than it had been since 1812. The repeal of the Missouri Compromise, the passage of the fugitive slave law, and the Dred Scott decision all tended to the security and welfare of the South.—(Senator Hammond's Barnwell speech, 20th October, 1858.)



FIRST BAPTIST CHURCH, COLUMBIA, IN WHICH THE SECESSION CONVENTION FIRST MET.

The War.—After years of angry discussion along these lines the crisis came—during a period of unprecedented prosperity in Carolina—on the election by the Anti-Slavery party of a President, in 1860, by less than a third of the popular vote. It found the peoples North and South solidly arrayed against each other with fatal unanimity. The "irrepressible conflict" burst into war. The North took the offensive for Federal domination and patronage, and after 1st January, 1863, for race equality, freedom and fraternity. They were sustained by the popular sentiment of the European masses. South Carolina and the South rose to a man—with no sympathy or support from without—to resist invasion, in defense of State autonomy and white supremacy. From an arms-bearing population of 55,046 in Carolina, 44,000 volunteered (most of them not identified with the slaveholding class) in defense of the domestic institutions of the State, its sovereignty and free trade. Ultimately 71,088 were mustered in.

Slaveholders.—In 1860 there were 26,701 slaveholders in South Carolina, less than 9 per cent. of the white population. Of these 60 per cent., belonging chiefly to the mercantile and professional classes, owned each only a few slaves. They frequently freed their domestics, which accounts for the fact that the free negroes in the South increased 23½ per cent. during the decade 1850-60, while at the North they increased only 13 per cent., in spite of the "Underground Railroad" and the active resistance to the enforcement of the law for the capture of fugitive slaves.

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Relative Strength.—The following figures as to the armies are now generally accepted:

NORTHERN ARMY.	
Whites from the North	2,272,333
Whites from the South	316,424
Negroes	186,017
Indians	3,530
Total	2,778,304
Southern army	600,000
North's numerical superiority	2,178,304
In the Northern army there were:	
Foreigners	494,900
Negroes	186,017
Total	680,917
Total of Southern soldiers	600,000

ARMIES AT THE WAR'S END.	
Aggregate Federal army, May 1, 1865	1,000,516
Aggregate Confederate army, May 1, 1865	133,433
Federal prisoners in Confederate prisons	270,000
Federals died in Confederate prisons (or a little over 8 per cent.)	22,570
Confederate prisoners in Federal prisons	220,000
Confederates died in Federal prisons (or 12 per cent., despite the blockade making hospital supplies contraband of war.)	26,436

Losses.—Poorly armed, poorly clad, poorly fed, practically without pay, for more than four years they maintained their cause, losing in battle, from wounds, and by diseases, 133,821 of their number. The Federal losses from the same cause were 309,800. The negroes, who, in earlier days, had been enticed away by promises from the Spaniards, and had sometimes sided with the Tories and the British, remained as a rule loyal to their masters in this war, served their families and tilled their fields while they were absent.

The Negro.—"The negro race, which was in slavery * * * a backward, kindly, pious and industrially valuable race * * * between whom and the Southern people no natural hate and fear found place, struck no single blow for its own freedom."—(Letter of Ex-Gov. D. H. Chamberlain to James Bryce, M. P., June, 1904.) "Not only has there been no approach to a race war, but the economic condition has steadily and swiftly bettered, until at the present time the district which thirty-five years ago was the most impoverished ever occupied by an English people is perhaps the most prosperous of its fields."—("The Neighbor," by Prof. N. S. Shaler, of Harvard, 1904, page 333.)

Vi et Armis.—The issue was decided by force of arms and numbers and was never submitted to legal adjudication. No indictments for treason, as is usual in rebellions, were made. An export duty was placed on cotton and import duties were increased by the National Government.

Reconstruction.—For eight years negro supremacy was enforced in the State by the Federal army. Wade Hampton, general of cavalry in the War of Secession, was the last leading representative of the old plantation slaveholder class; from the first days of reconstruction he favored negro education and suffrage, and on these issues he delivered the State in 1876 from the negro domination imposed on it by Federal arms. When, on 10th April, 1877, the Federal guard filed out of the south door of the Capitol at Columbia, the negro government collapsed without a struggle. The white citizens quietly resumed the administration of affairs.

The Result.—President Eliot, of Harvard, in a speech before the Central Labor Union in Boston, February, 1904, on the world-wide conflict of labor and capital, sums up the result of this titanic struggle in these words: *"How many things my generation thought were decided at Appomattox; but during the subsequent forty years it has gradually appeared that hardly anything was settled there except the preservation of the unity of the national territory."*

Even tariff protection continues to be an imminent issue, the so-called "arrogant, domineering, self-constituted aristocracy" of the South in the last century being replaced by the trusts of overgrown Northern capitalists, with this difference: the slaveholders worked as best they could with an ancient and universal institution imposed on them against their protest, while the protected trusts themselves institute a servitude against the protest of those they impose it on.

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For more than two centuries, under ten written constitutions, the State had been governed by a more than usually centralized democracy. Opposing a similar centralization of functions by the Federal Union, the collision dispersed these functions into smaller and smaller civil divisions; counties, townships, school districts. The latter, restricted to an area of nine to forty square miles, were endowed with the sovereign power to lay taxes and incur debt. A centrifugal tendency marked, also, in subdivision of farms, and in the establishment of cross-road stores and village banks.

After Reconstruction.—The white people of the State, immediately after the overthrow of the negro government of reconstruction days—a period in the State's history filled with horrors and suffering—began immediately to restore good government. Great attention was given to the readjustment of the financial affairs of the State, the restoration of the State's credit, to education, and to the enactment of safe laws for the government of the commonwealth. Much was accomplished, and slowly but surely the material interests of the State began to recover from the scourge of war and the worse scourge of negro misrule. The South Carolina University and the South Carolina Military Academy reopened their doors to the youth of the State, as did other institutions of learning. There was little to disturb political conditions until there grew into strength and vigor what has been termed the "Farmer's Movement."



BRIDGE BURNED DURING CIVIL WAR.

The Farmers' Movement.—This movement was begun by Benjamin R. Tillman, at present serving his third term as senior United States Senator from this State, and others. It had its origin in dissatisfaction on the part of the agricultural class with conditions prevailing in the State at the time. It resulted in the stormy election of 1890, which resulted in victory for the Movement and in making Tillman Governor of the State, in which position he served two terms, going thence to the United States Senate.

Dispensary System.—Soon after Tillman became Governor, a strong sentiment sprang up in South Carolina in favor of prohibition, and this resulted in the General Assembly enacting what has since become known as the State Dispensary System—a system of handling the liquor traffic heretofore untried in the United States. The State established a wholesale bottling plant, at which all liquor was bottled and from which it was shipped to county dispensers, who sold it to individuals between sunrise and sunset, being prohibited, however, from selling to minors or habitual drunkards. Very bitter feeling was engendered as a result of this legislation, and the effort to enforce the provisions of the law led to considerable bloodshed.



B. R. TILLMAN, U. S. Senator.

The Darlington War.—Some time after the law went into operation, liquor constables and citizens clashed in the town of Darlington, several being killed on each side. The State was aflame and a fortnight of wild excitement followed, Gov. Tillman calling out the State militia, and a number of companies in several portions of the State refusing to obey his orders and putting down their arms. Finally a goodly force was sent to Darlington, but nothing more serious than the first conflict occurred. In the succeeding years the enforcement of the dispensary law became a more and more serious problem, and though the main features are now in the State Constitution, the General Assembly has seen fit to enact (in 1907) a law abolishing the State bottling plant, the State itself retiring from the business, taking a step towards local option in permitting each county to vote whether it wishes liquor or not, controlling the bottling and sale of liquor, and there is a sentiment for absolute prohibition, many of the counties having already voted in favor of prohibition and "gone dry."

The New Constitution and the Franchise.—One of the principal events following the success of the Farmers' Movement of 1890 was the calling of a constitutional convention, which met in 1895. This convention was primarily

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for the purpose of readjusting the franchise in such a manner as to eliminate the ignorant vote by legal means. A provision was adopted requiring an educational and a property qualification which had the desired effect. A complete new Constitution was adopted, but the only other radical departure was in the incorporation of the chief features of the dispensary system of handling the liquor traffic. An excellent provision was incorporated also providing for a constitutional tax for educational purposes.

The Primary Election System.—As a result of agitation and practice in part in the upper portion of the State, and of the Farmers' Movement, naturally followed by the new franchise law eliminating the negro as a voting factor, which law, being fought, stood the test of the Supreme Court of the United States and has served as a model for other Southern States, was the introduction of the primary election system in this State. Today all State officials, county officials, and municipal officials, even the State's United States Senators and Congressmen, are virtually elected in the primaries, the general elections being mere matters of form.

The Spanish American War.—When the United States Government issued the call for volunteers at the outbreak of the war with Spain, as in every other conflict in which the nation has engaged, South Carolina did her full duty. The call came in April, 1898. South Carolina soon had two full regiments and an independent battalion of infantry (finally incorporated in the Second Regiment), one battery of heavy artillery and a command of naval reserves in the field. The Second Regiment and the independent battalion served in Cuba until the evacuation of the island by the United States at the close of the war. The naval militia manned the United States steamship *Celtic,* and officers and men served on several other United States ships. The *Celtic* was at Santiago when the Spanish ships were destroyed. General M. C. Butler, one of the dashing chieftains of the Confederate Army, served in the United States Volunteer Army in this conflict as a major-general; Major Micah Jenkins was an officer in the famous regiment of "Rough Riders," and was conspicuous for the gallantry he displayed in the charge up San Juan Hill before Santiago. In the regular army Captain George H. McMaster distinguished himself in the Philippines, and Lieutenant Victor Blue's record in the navy, in the operations about Santiago, made him one of the shining lights in the country's naval history.

Two Great Colleges.—In 1890 the South Carolina University was reduced to a college and so called. The State then set about to establish what the Farmers' Movement had demanded—a great State Agricultural and Mechanical College. With the behest of Thos. G. Clemson, accepted by the General Assembly prior to 1890, this great college was established in the upper portion of the State, and is today a model institution. The demand was apparent after the establishment of Clemson for a great Woman's Normal and Industrial College also, and this resulted in the establishment by the State of the splendid college at Rock Hill that is now known as the Winthrop Normal and Industrial College for Women. It is regarded as perhaps the best woman's college in the South. Later on, in 1906, the South Carolina College was again made a university, and is continuing its splendid work for the young manhood and womanhood of the State.

Wonderful Development.—Nothing in South Carolina history can compare with the remarkable advance that the State has made in manufacturing in the last two decades. Notwithstanding the political upheavals and the bickering over the best methods of handling the liquor problem, the disastrous earthquake at Charleston in 1886 destroying $6,000,000 worth of property, and the terrible hurricane on the coast in 1893 costing many lives. the State has advanced in manufacturing at a rate perhaps not excelled in the history of the world. In the decade between 1890-1900 the increase in the production of cotton goods alone was 203 per cent. Manufacturing plants utilizing much of the water power sprang up one after another all over the Piedmont section of the State. Today the State ranks second in the Union in cotton manufacturing, and is making strides in industrial and agricultural development that are actually straining the population to keep the pace, consequently attracting people of other sections to come and aid in the work of upbuilding and to share the consequent prosperity that is following the development of mechanical powers and resources of soil and mines.

Commerce.—The wonderful development in manufacturing and the beginning made in the trucking industry soon brought to notice in no uncertain manner the need for more people and accentuated the necessity for opening the State, as it was in its earliest days, to the commerce of the world. These conditions led to the establishment of a new department of the State Government in 1904, charged with the upbuilding of the commerce of the State, giving close attention

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to the commercial side of agriculture and stimulating both by means of the introduction of desirable and carefully selected new citizens. This work has been pushed vigorously, and by the end of the year 1907 it is hoped the products of the manufactory, the forest, the field and the mine of South Carolina will be going to the markets of the world through the State's own port of Charleston instead of seeking these markets by costly circumlocution.

While manufactures have gone to the fore, agriculture is still the solid foundation of the prosperity of the State. The farmer is growing the cotton for the manufacturer, he is growing the food stuffs for the thousands of operatives, and now he is preparing to grow other agricultural products that the markets of the world demand, and reap the harvest that comes from those branches of agriculture he has heretofore neglected because of concentration of effort on one crop alone. Indeed, South Carolina is but upon the threshold of her real prosperity. She is the "Garden Country of America"—a country filled with hospitable, earnest, hard-working people, but a people ever jealous of honor.

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CHAPTER III.

HOW THE STATE IS GOVERNED.

For an adequate idea as to how the commonwealth is governed it would be necessary to trace the development of the institutions of the State from the colonial period on down the years. In the preceding chapter this growth has been touched upon somewhat. Unfortunately space permits only a plain outline of the machinery of the government of the present day under the Federal Constitution and the State Constitution of 1895. The attempt is made to present this outline briefly, preceding it with this pertinent extract from the introduction of McCrady's "History of South Carolina under the Proprietary Government":

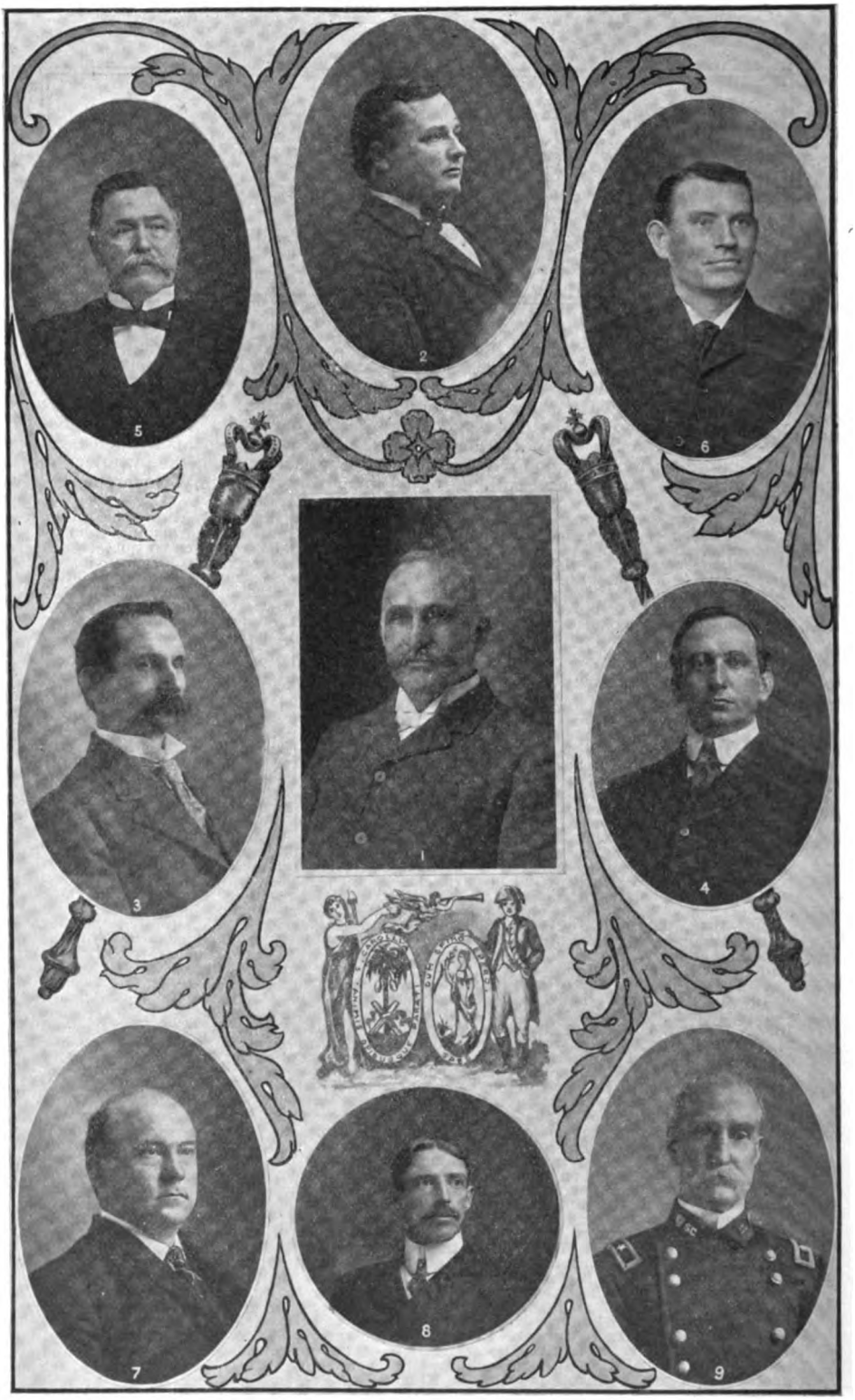
"Despite political turmoil, hurricane, pestilence, and fire, the tomahawk of the Indian and the sword of the French and Spaniard, we shall find gradually developing from an emigrants' camp to social order and settled government, and carrying on successfully at their extreme end of the line of English colonies the experiment of representative government. We shall find them laying the foundation of great fortunes, building churches, quarreling over religion, but, withal, strenuously maintaining it and curiously mixing Puritan fanaticism with high church dogma, founding schools and libraries, and laying so broad and deep the foundations of jurisprudence that that structure has continued to this day to rest upon the Code of Laws adopted in 1712."

The reference in the above is to the following from the same source:

"It will be remembered that during Governor Ludwell's administration the Proprietors had disallowed the enactment of a habeas corpus act upon the ground that it was not necessary to reënact any statute of England, as such statute applied to this colony *proprio vigore* under the charter. That theory was now abandoned, and under Craven the habeas corpus act of King Charles the Second, was formally reënacted. Then followed the adoption of Trott's great work,—a general codification of the English statutes, applicable to the condition of the new country, and a compilation of all colonial acts then in force.

"This was for the time a stupendous work. There had been before this several instances of compilation of colonial statutes in other provinces, a brief mention of which, in this connection, will not be without interest here. In Massachusetts Nathan Ward had compiled the perpetual laws enacted by the General Court as early as 1641.—this work was entitled the 'Body of Liberties,' sometimes called 'Liberties,' or 'Book of Liberties.' There were also several revisions by the Plymouth Colony General Court—1636, 1658, and 1671. In Virginia the laws in force in 1662 were collected out of the Assembly Records, digested into one volume, and revised and confirmed by the General Assembly, and in 1684 a complete collection of all the laws in force, with an Alphabetical Table annexed, was made. In 1673 was published the book of General Laws for the people within the jurisdiction of Connecticut, collected out of the records of the General Court, then lately revised with emendations and additions established and published by the General Court of Connecticut holden at Hartford in October, 1672. In New York there had been a collection of the laws from 1691 to 1694, and in 1710 the laws as they were enacted by the Governor's Council and General Assembly from 1691 to 1709 were compiled and published. Following Trott's collection of the laws of South Carolina in 1712, which we are now considering, the laws of Pennsylvania, collected into one volume, were published by the Governor and Assembly of the province in 1714; there was a collection of the laws of New Hampshire in 1716; and a partial collection of the laws of New Jersey was made in 1717. These works were all compilations, or collations as they were sometimes termed, of the colonial statutes and laws in force in the respective provinces at the time of their collection, and were made either by private individuals or by enactments of the colonial legislatures. And such was a part of Trott's work—that relating to the compilation of the laws of the province; but far the most important was the codification of the English statutes, to which we can find no other like and contemporaneous work in America. This work was more than a compilation. It was a codification embodied in a single act. The act was entitled 'An act to put in force in this Province the several statutes of the Kingdom of England or South Britain therein particularly mentioned.' It comprised an actual revision of the whole body of the statutory law of England, and the selection from it of such statutes not only as were then applicable to the condition of the colony at the time, but which would become so on its further development. The statutes selected, and modified when needful, were one hundred and sixty-seven in number, covering one hundred and eighty pages royal octavo of the second volume of the Statutes at Large. Strange to say, the preamble to this most important act, which is unusually brief, gives no intimation of the magnitude of the measure and assigns the most inadequate reasons for its enactment. The occasion for the act stated is that 'many statute laws of the Kingdom of England or South Britain by reason of the different way of agriculture and the differing production of the earth of this Province from that of England are altogether useless, and many others (which otherwise are very apt and good) either by reason of their limitation to particular places or because in themselves they are only executive by such nominal offices as are not

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1. MARTIN F. ANSEL, Governor. 2. T. G. MCLEOD, Lieutenant-Governor. 3. R. M. MCCOWN, Secretary of State. 4. J. FRASER LYON, Attorney-General. 5. R. H. JENNINGS, State Treasurer. 6. A. W. JONES, Comptroller-General. 7. O. B. MARTIN, State Superintendent of Education. 8. E. J. WATSON, Commissioner of Agriculture, Commerce and Immigration. 9. J. C. BOYD, Adjutant and Inspector-General.

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in nor suitable for the constitution of this government are thereby become impracticable here.' With this very unsatisfactory explanation of the occasion of the work, the act provided that the statutes or parts of statutes of the kingdom of England enumerated in an elaborate table annexed, consisting of statutes from the time of the great charter in the ninth year of King Henry the Third, which was itself specifically mentioned, to the eighth year of Queen Anne, should be of the same force in the province as if they had been enacted in the same. The text of the enumerated statutes was given in full and included in the enactment. It was also provided in the same act that all and every part of the common law of England, when the same was not altered by the enumerated acts or inconsistent with the particular constitutions and customs and laws of the province, and excepting such as had relation to ancient tenures which were taken away by acts of Parliament of 12 Charles II, c. 24, doing away with the court of Wards and Liveries and Tenures in capite and by Knight's service, was to be of full force in the province. There was also excepted that part of the common law which related to matters ecclesiastical which were inconsistent with or repugnant to the settlement of the Church of England in the province as there established. The Governor with his Council were constituted a Court of Chancery, with the same powers as those exercised by the Lord Chancellor or Lord Keeper of the Great Seal of Great Britain, in England. The courts of Record in the province were to have the powers of the King's or Queen's courts. All the statute laws of England not enumerated in the act (such only excepted which related to her Majesty's customs and acts of trade and navigation) were declared impracticable. It was provided that nothing in these acts should be construed to take away or abridge the liberty of conscience, or any other liberty in matters ecclesiastical, from any of the inhabitants of the province, but that the same should still be enjoyed according to the powers and privileges granted to the true and absolute Lords Proprietors by their charter from the Crown, and the several acts of assembly of the province then in force.

"A remarkable circumstance in connection with this act is the undue haste in which a measure of such great importance was hurried through the legislature. It appears by the Journal that it was read in the Assembly, for the first time on Wednesday, the 26th of November, 1712, and immediately passed by that body with some amendments. It is not mentioned by whom this act was introduced. It was sent at once to the Governor and Council. That body hesitated to act so inconsiderately upon so grave and important a measure, and returned it with a message on the 28th, saying:

"'We take it to be a bill of that consequence that it will require your, as well as our diligent care to overlook all the statutes, that we may know whether all or any part of them are adopted to the nature and constitution of the government of the province. We give to you as our advice and opinion that the best way for both Houses to be satisfied in a case of this consequence will be to commit the bill to a committee of both Houses to examine the said statutes in which we shall readily join with you in appointing a Committee to join a Committee of yours.' This suggestion of the Governor and Council was at first accepted by the House, and a committee appointed to examine the bill and the several English statutes with instructions to report at the next session of the General Assembly; or if in case that Assembly should sit no more, the committee were to report to the next sitting of the succeeding General Assembly. What occurred to change this course of proceeding, and to demand immediate action upon the bill, is not disclosed in the Journal, nor is there any other contemporaneous statement. The entries in the Journal merely show that the bill was read a second time on December 5th, and a third time on the 11th, and that it was ratified on the 12th. The committee probably shrank from so arduous a labor as the revision of these statutes, or perhaps felt themselves incompetent to the task, and determined to accept Trott's work as it stood. It is, perhaps, after all as well that they did so. Their crude attempts to amend may have rather marred than improved a compilation which has remained the groundwork of all subsequent general legislation in South Carolina for nearly two centuries."

No attempt will be made to trace the evolution of South Carolina laws from this time to the time of the adoption of the Constitution of 1895, under which the people of the State are now living.

This Constitution provides for three coördinate branches of the Government—the Executive, the Legislative, and the Judicial, and forever they are to be equal and distinct.

Rights of the People.—In the Declaration of Rights it is stated that all political power is vested in the people, and the people alone have the right to change their form of government; that representation shall be according to population; that the Legislature shall not limit freedom of speech; that the privileges of citizens shall not be abridged in any way without due process of law; that property shall be assessed at its value; that the people must first consent to the levying of any special tax before it can be collected; that bills of attainder and *ex post facto* laws shall not be enacted; that the right of the suffrage shall always be protected by proper franchise laws; that all elections shall be open to all possessing qualifications provided for by the Constitution of the State; that property qualifications are not necessary for the holding of public office; that acceptances of challenges to fight duels work forfeiture of the right to hold office; that no office shall be held for life; that temporary absence from the State does not forfeit citizenship once obtained; that no laws shall be suspended except by the General Assembly; that all court proceedings shall be public and the defendants shall have speedy trial; that all persons be secured against the search of their premises without due process of law; that no person for offenses (not minor) shall be required to answer without a proper indictment; that private property shall not be taken for private use without consent of the owner, nor for public use without just compensation to the owner;

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DR. J. W. BABCOCK,
Supt. Hospital for Insane.

that no person shall twice be placed in jeopardy for the same crime; that the rights of all accused persons shall be fully protected; that excessive bail shall not be required ;that corporal punishment shall not be inflicted; that the power to punish for contempt shall not extend in any contingency to imprisonment in the State Penitentiary; that the right to refuse bail in capital offenses extends only when the proof is evident and the presumption of guilt great; that the jury in all prosecutions for libel must be the judges of the law and the facts; that treason against the State shall consist wholly in levying war or in giving aid and comfort to enemies of the State; that no person can be convicted of treason except upon the testimony of two persons who witnessed the same overt act, or upon open confession in court; that the privilege of habeas corpus shall only be suspended in cases of rebellion, or invasion, when the public safety demands such a course; that the right of trial by jury shall be preserved inviolate; that militia must be maintained by the State alone; that the military power shall always be subordinate to the civil authority; that the General Assembly alone can give authority for the exercise of martial law; that all navigable waters must forever be maintained and considered as public highways.



A. J. BETHEA,
Private Secretary to
the Governor.

The Suffrage.—In Article II the Constitution declares that all elections by the people shall be by ballot, which ballots must never be counted in secret; that no person shall hold two offices of honor or profit at the same time, except the party may also be an officer of the militia or a notary public. The qualifications for the suffrage are set forth in the Constitution in considerable detail. They are in brief as follows:

The voter must be a citizen of the United States, a man who has paid six months before election any poll tax then due, and can read and write any section of the State Constitution, or can show that he owns and has paid all taxes due the previous year on property assessed in the State at $300 or more. Previous residence of two years in the State, one year in the county, and four months in the town or the precinct is a requirement. All felons, and persons convicted of bribery, unless pardoned, the insane and paupers, are prohibited the ballot.

Persons convicted of certain crimes, the insane, idiots and paupers, are deprived of the franchise. The General Assembly is required by law to provide all the machinery for the carrying out of the provisions of the Constitution as to the franchise. The same general requirements are made to apply to municipalities.



D. J. GRIFFITH,
Supt. State Penitentiary.

The Legislative Department.—There are two distinct branches—the House of Representatives and the Senate. The two bodies together constitute the General Assembly of South Carolina. The members of the House must number 124 and are chosen by ballot by the qualified voters at an election held every second year. The representation is by counties, one representative being allowed to every 124th part of the whole number of the inhabitants of the State. If any county fails to meet this requirement, it is allowed one representative without regard to population. The Senate is composed of one member from each county, elected for a term of four years, and the elections are so arranged that every two years half of the body is elected. Senators must be at least 25 years and Representatives 21 years of age. Annual sessions of the General Assembly are held beginning on the second Tuesday of January of each year. The per diem of the members is limited to 40 days. All bills for raising revenue must originate in

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the House. Every act or joint resolution having the force of law must relate to only one subject. Each must be read three times in each House on as many separate and distinct days, and must be duly ratified in the Senate Chamber, the members of both Houses being in attendance. Joint sessions are held in the Hall of the House of Representatives. The Lieutenant-Governor of the State is President of the Senate and presides over that body. The House elects one of its own members as Speaker. The old English custom of presiding officers wearing robes is practiced, and the Mace of the State is placed on the Speaker's desk at the opening of each day's session. The Constitution provides the class of laws that the General Assembly shall enact of a general character.



A. S. SALLEY, JR.
Secretary State Historical Commission.

The Governor.—The supreme executive authority of the State is vested in the chief magistrate, who is styled "the Governor of the State of South Carolina." He is also commander-in-chief of the militia of the State. In him is vested the pardoning power, all applications for pardon, reprieves, commutations, etc., for conviction only being first submitted to the State Board of Pardons for its recommendations. The Governor is not bound by the recommendations, however. The Governor makes an annual message to the General Assembly, in which he gives information as to the general condition of the State and its affairs and recommends such measures as he may deem necessary or expedient. He has the power to convene the General Assembly in extra session whenever he deems it necessary. He commissions all officers of the State under the Great Seal of the State. He is required to reside in the capital except in cases of contagion or emergencies of war, except in case the General Assembly should sit in any other place, when he is required to reside wherever the sessions are held. The Governor has the power to veto any measure passed by the General Assembly, sending it back to that body with his reasons therefor. In order to pass a measure over the Governor's veto a two-thirds majority of both Houses is required. No measure can become law without the approval of the Governor, except in cases above named.

The Governor must be elected by the people; his term of office is two years, or until his successor is qualified, and in case of his death the Lieutenant-Governor succeeds to the office. No man can be Governor unless he is 30 years of age. Should there be a tie vote in the general election, the General Assembly selects the Governor *viva voce*, but the choice is confined to the two who have the same number of votes. Contested elections for Governor are always determined by the General Assembly.

The Lieutenant-Governor.—The Lieutenant-Governor, as all other elective State officers, is chosen by vote of the qualified electors in the same election as Governor. As President of the Senate the Lieutenant-Governor has no vote, unless the Senate is equally divided. The Senate elects a Presiednt *pro tempore*, who, in the event of the Lieutenant-Governor becoming Governor or acting as Governor, succeeds to the position of President of the Senate as well as Lieutenant-Governor.



EARLE SLOAN,
State Geologist.

Other State Officers.—The other constitutional State officers are the Secretary of State; the Comptroller-General, whose department has charge of all of the tax machinery of the State; the Attorney-General; the State Treasurer; the Adjutant and Inspector-General; the State Superintendent of Education, and three State Railroad Commissioners, who are elected by the people for terms, respectively, of 2, 4 and 6 years each.

By legislative enactment, creating departments of government, there are also a Commissioner of Agriculture, Commerce and Immigration, whose term of office is four years; a State Geologist, whose term is four years; a State Bank Examiner, whose term is four years; a State Librarian, who is elected by the General Assembly every two years; a State Dispensary Auditor, whose term of

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office is four years, and an Insurance Commissioner, whose term of office is two years. All of these last-named officers are appointed by the Governor, with the exception of the State Librarian and the State Insurance Commissioner. The Governor also appoints the Superintendent of the State Hospital for the Insane, and the members of the Board of Regents, but the Superintendent of the State Penitentiary and the directors of this institution are elected by the General Assembly.

Judicial Department.—The judicial power of the State is vested in the Supreme Court and in the Circuit Courts. Of the latter, the Court of General Sessions has criminal jurisdiction only, and the other branch, known as the Court of Common Pleas, civil jurisdiction only. County courts may be established as a result of an election held in any particular county under specified regulations. The Supreme Court consists of a Chief Justice and three Associate Justices. They are elected by the General Assembly for a term of eight years each, the terms being so arranged that one Justice shall go out of office every two years. The Supreme Court appoints a reporter, a clerk and a librarian, each of whom hold their offices for four years. In order to be eligible to the office of Chief Justice, a candidate must be at least 26 years of age, have been a licensed attorney for five years, and a resident of the State for the same period. The Governor has the right to appoint to the unexpired term in case of any vacancy on the bench. In order to reverse the court below, three of the Justices must agree to the reversal. In case of equal division, the decision below stands. Special provision is made for the calling into consultation of all the Circuit Judges of the State. The State is divided into twelve judicial circuits, and the Court of Common Pleas and General Sessions are required to sit in each county at least twice in every year. At the Criminal Court prosecutions are conducted by Circuit Solicitors, there being one for each Circuit, and these Solicitors being elected by the people. Each county has a Probate Court in charge of the Judge of Probate, who has jurisdiction in all matters testamentary and in administration, in business appertaining to minors and the allotment of dower and in cases of idiocy and lunacy. The Judge of Probate is elected by the people of the county.



MISS L. H. LABORDE,
State Librarian.



Y. J. POPE,
Chief Justice of the State Supreme Court.

The Governor appoints Magistrates in all parts of the State, who hold office for a term of two years. These Magistrates have jurisdiction in minor cases in both civil and criminal matters, except in capital cases the Magistrate sits as Judge in the preliminary court with jurisdiction to commit for trial by the Circuit Court, bail or discharge for lack of evidence.

The Circuit Judges are elected by the General Assembly, and the Supreme Court arranges for the systematic interchange of circuits. Petit juries of Circuit Courts consist of twelve men, and in the Magistrates' Courts of six men, and the grand jury of each county consists of eighteen men. Judges cannot charge juries in respect to matters of fact, but can merely declare the law. The clerk of the Circuit Courts in each county is elected by the people of the county for a term of four years. The voters of each county also elect a Sheriff and a Coroner each for a term of four years. Circuit Courts and all courts inferior thereto, as well as municipal courts, have the power in their discretion to impose sentence of labor upon highways, streets and other public work upon persons by them sentenced to imprisonment.

Jurisprudence.—The fundamental law provides for arbitration of differences. It also provides for the change of venue either by the State or the defendant from one county to another in the same circuit, but no change of venue can be granted in criminal cases until after a true bill has been found by the grand

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MAP OF STATE SHOWING THE JUDICIAL CIRCUITS



MAP OF STATE SHOWING CONGRESSIONAL DISTRICTS

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jury. Justice is administered in a uniform mode for pleading without distinction between law and equity. A Code Commissioner appointed by the Legislature is required to keep all of the statute laws of the State thoroughly codified.



EUGENE B. GARY,
Associate Justice Supreme Court.

If a prisoner is lynched through the negligence of any State, county or municipal officer having him in charge, the officer is subject to trial for misdemeanor, and upon the rendering of a true bill, vacates his office until the determination of the trial. The trial shall be in a county other than the one in which the lynching occurred. In all cases of fatal lynching the county in which the lynching takes place, without regard to the conduct of the officers, becomes liable in damages of not less than $2,000 to the legal representatives of the victim, and the county has redress against the parties who commit the lynching.

Counties and County Governments.—Full machinery is provided for the formation of new counties, but no new county can have less than 400 square miles and no old county can be reduced to an area of less than 500 square miles. Each county is an election district and is a body politic and corporate.

Each county is divided into townships, which is likewise a body politic and corporate, but, at this time, though the Legislature has the right to do so, there is no system of township government, the division being simply for convenience in matters of taxation.

Congressional Districts.—The several counties are divided into seven Congressional Districts as follows:

First. Berkeley, Clarendon, Charleston, Colleton, and Dorchester.

Second. Aiken, Barnwell, Bamberg, Beaufort, Saluda, Edgefield, and Hampton.

Third. Abbeville, Anderson, Greenwood, Newberry, Oconee, and Pickens.

Fourth. Greenville, Laurens, Spartanburg, and Union.

Fifth. Cherokee, Chester, Chesterfield, Fairfield, Kershaw, Lancaster, and York.

Sixth. Darlington, Florence, Georgetown, Horry, Marion, Marlboro, and Williamsburg.

Seventh. Calhoun, Lee, Lexington, Orangeburg, Richland, and Sumter.

Judicial Circuits.—The several Judicial Circuits are arranged as follows:

First. Calhoun, Berkeley, Dorchester, and Orangeburg.

Second. Aiken, Bamberg, Barnwell, and Hampton.

Third. Sumter, Clarendon, Williamsburg, and Lee.

Fourth. Chesterfield, Marlboro, and Darlington.

Fifth. Kershaw and Richland.

Sixth. Chester, Lancaster, York, and Fairfield.

Seventh. Cherokee, Spartanburg, and Union.

Eighth. Abbeville, Laurens, Greenwood, and Newberry.

Ninth. Beaufort, Charleston, and Colleton.

Tenth. Anderson, Greenville, Oconee, and Pickens.

Eleventh. Edgefield, Lexington, and Saluda.

Twelfth. Georgetown, Florence, Horry, and Marion.

Municipalities.—Full legal machinery is provided by law for the municipal governments of the several cities, towns and villages of the State, there being provision for the acquirement of water works and lighting plants, the levying and collection of taxes, the issuing of licenses, and as to the bonded debts. Cities and towns are also permitted to exempt for a period of five years, by ordinance, certain classes of manufactories from all taxes, except for school purposes, provided such ordinances be ratified by the qualified electors at an election. The Constitution of the State prohibits for all time the issuing of licenses by municipal corporations for the purpose of selling liquor.

All prize fighting is also prohibited for all time in this State.

Corporations.—The laws of the State are very complete in dealing with corporations. For the purpose of chartering corporations there is a general incorporation act, which authorizes the Secretary of State, upon proper showing, to issue a State charter. All transporting and transmitting corporations are taxed as such and are not permitted to make any contracts relieving them of common law liability in reference to the carriage of passengers. All corporations doing business under the laws of this State are required to maintain an authorized

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agent and an office where legal documents can be properly served. Railroads are not permitted to buy up competitive lines, and are required, when directed by the State Railroad Commission to do so, to make physical connection with other railroads at junctional points. No foreign corporation can build or operate a railroad in this State without first becoming domesticated by obtaining a charter in this State.

Provisions are made by law for the examination and inspection of all banking and fiscal corporations. The State is protected by law against the formation of trusts and combinations of interests for the destruction of competition. The rights of railway employes are thoroughly protected, as much so as those of the passengers. The laws of the State in regard to the liability of stockholders of corporations are complete.

Finance and Taxation.—The laws of this State provide for direct taxation of all property of every description except such as may be exempted by law for municipal, educational, library, scientific, religious or charitable purposes. There is also a law providing a graduated tax on incomes, but this has not



JOHN H. EARLE. B. L. CAUGHMAN, CHAIRMAN. J. M. SULLIVAN.
State Railroad Commission.

proven very effective up to this time. The State Government is directed almost entirely by a direct tax on property levied by the General Assembly. The county governments are also permitted to levy a direct tax for corporate purposes. The bonded debt of any county, township, school district or municipal corporation cannot exceed 8 per cent. of the assessed value of all the taxable property therein, the value being that determined for the purposes of State taxation.

The credit of the State cannot be loaned or pledged for the beenfit of any individual, company, association or corporation, and the State cannot become a stockholder in such. No scrip, certificate or other evidence of State indebtedness can be issued, except for the redemption of stocks, bonds or other evidence of indebtedness previously issued, or for such debts as are expressly authorized by the Constitution. No money can be drawn from the treasury except upon appropriations made by the General Assembly.

Education.—The laws and everything relating to education are so fully covered in the chapter on that subject that it is not deemed necessary to here refer thereto.

Charitable and Penal Institutions.—Provision is made in the fundamental laws of the State for institutions for the care of the insane, the blind, the deaf and the dumb and the poor. The General Assembly elects the directors of all such institutions. All convicts sentenced to hard labor by any of the courts in the State may be employed on the public works of the State or of the counties and upon the public highways.

Militia.—All male citizens of the State between the ages of 18 and 45 years, except such as are exempted by the laws of the United States or of this State, "or, who, from religious scruples may be averse to bearing arms," are subject to service in the militia of the State. The Governor is given power to order out the militia to execute the laws, repel invasion, suppress insurrection and preserve the public peace. Provision is made by law also for the pensioning of indigent or disabled Confederate soldiers or sailors of this State and of the

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late Confederacy who are citizens of this State, and also to the indigent widows of such soldiers and sailors.

Eminent Domain.—All of the rivers and navigable streams of the State are declared by the Constitution common highways and forever free, without any taxes or imports unless the General Assembly expressly provides therefor. When titles of land fail from defect of heirs all such property reverts to the State.

Impeachment.—Full provision is made for the conduct of impeachment proceedings, and all impeachments are conducted by the State Senate. Full protection is thrown around the accused.

The Dispensary System.—In consequence of the development of a strong prohibition sentiment in the State, in 1902 a law was enacted for the control of the liquor traffic, which was patterned in some measure upon the Swedish system. This was the Dispensary Law, the State at a central bottling plant undertaking to put and furnish to consumers, through county dispensaries, only "chemically pure" liquors. The barroom was banished, and the dispensary could only sell liquor between sunrise and sunset, no drinking on the premises being allowed. Later, in 1895, these provisions were embodied in the State Constitution. In the first years of the operation of this system the attempt to enforce the law with liquor constables led to frequent clashes, the most lamentable occurring in Darlington, where several citizens and constables were killed, leading to the calling out of State troops and an exciting period, which has been termed the "Darlington War." The road of the dispensary system throughout has been a stormy political one, leading finally, in 1907, to the abolition of the State dispensary and substituting therefor local option to the extent of each county buying and bottling and selling through dispensaries its own liquor, the people having the right, however, to vote between "prohibition" and "dispensary."

Miscellaneous.—Women of 21 years of age are by the Constitution made eligible to the office of State Librarian and the departmental clerkships.

Any person who denies the existence of a Supreme Being can hold no office in this State.

Lotteries are not permitted in South Carolina, and it is unlawful to even advertise the sale of tickets of lotteries operated in other States or countries. It works forfeiture of office for any official to engage in gambling or betting on games of chance.

The real and personal property of a married woman held prior to marriage is considered her separate property and she has equal power over it as if she were unmarried.

Divorce.—The Constitution says: "Divorce from the bonds of matrimony shall not be allowed in this State." In the Constitutional Convention of 1905 an effort was made to provide for divorce under certain circumstances, but this effort, though it was a most vigorous one, failed utterly. This State has never but once had a divorce law, and public sentiment has from the time of the foundation of the colony frowned upon divorce; and there is only one instance in the entire history of the State up to the Reconstruction period where one has been granted.

Prior to the Constitution of 1868, divorces were unknown to the laws of South Carolina.

The Constitution of 1868 (Art. XIV, Sec. 5) declared: "Divorces from the bonds of matrimony shall not be allowed but by the judgment of a court, as shall be prescribed by law."

The Act of January 31, 1872 (15 Stats., 30), provided:

"That a divorce from the bonds of matrimony may be decreed for the following causes: 1st, adultery; 2d, when either party wilfully abandons or deserts the other for a period of two years: *Provided*, that when the suit is instituted by the party deserting, it appears that the desertion was caused by the extreme cruelty of the other party, or that the desertion by the wife was caused by the gross or wanton and cruel neglect of the husband to provide suitable maintenance for her, he being of sufficient ability to do so."

By the Act of 1878 (16 Stats., 719) the above-quoted provisions were repealed. In 1879 the Supreme Court decided that "the Act of 1878, repealing all divorce laws in South Carolina, deprived the courts of this State of jurisdiction of actions for divorce, even though pending at the passage of the Act," thus making divorce impossible except through the enactment of a new law on the subject.

The present Constitution, adopted in 1895, in Section 3 of Article XVII, declares: "Divorces from the bonds of matrimony shall not be allowed in this State," as stated above.

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GOVERNORS OF SOUTH CAROLINA.

By A. S. Salley, Jr.

I.

Under Proprietary Government.

1. William Sayle, March 17, 1670—March 4, 1671. (Appointed by Sir John Yeamans under authority from the Lords Proprietors.)
2. Joseph West, March 4, 1671—April 19, 1672. (Nominated by Governor Sayle and Council to succeed Sayle, retired.)
3. Sir John Yeamans, April 19, 1672—July, 1674. (Appointed by the Palatine.)
4. Joseph West, August 13, 1674—June, 1682. (Appointed by the Palatine. From June to October, 1675, during the absence of Governor West, John Godfrey, by choice of the Council, acted as Governor.)
5. Joseph Morton, 1682—1684. (Appointed by the Palatine.)
6. Sir Richard Kyrle, 1684. (Appointed by the Palatine.)
7. Robert Quary, 1684. (Elected by the Council on the death of Kyrle.)
8. Joseph West, 1685. (Appointed by the Palatine.)
9. Joseph Morton, 1685—1686. (Appointed by the Palatine.)
10. James Colleton, 1686—1690. (Appointed by the Palatine.)
11. Seth Sothell, 1690—1692. (Assumed the governorship by right of being a Proprietor.)
12. Philip Ludwell, 1692—1693. (Appointed by the Palatine.)
13. Thomas Smith, 1693—1694. (Appointed by the Palatine.)
14. Joseph Blake, 1694. (Elected by the Council on the death of Smith.)
15. John Archdale, 1694—1696. (Assumed the governorship by right of being a Proprietor.)
16. Joseph Blake, 1696—1700. (Appointed by the Palatine.)
17. James Moore, 1700—1702. (Elected by the Council on the death of Blake.)
18. Sir Nathaniel Johnson, 1702—1710. (Appointed by the Palatine.)
19. Edward Tynte, 1710. (Appointed by the Palatine.)
20. Robert Gibbes, 1710—1711. (Elected by the Council on the death of Tynte.)
21. Charles Craven, 1711—1716. (Appointed by the Palatine.)
22. Robert Daniell, 1716—1717. (Appointed by Craven as deputy.)
23. Robert Johnson, 1717—1719. (Appointed by the Palatine.)

II.

Under Royal Government.

1. James Moore, 1719—1721. (Son of 17. Elected by a convention of the people, who had overthrown the government of the Proprietors.)
2. Sir Francis Nicholson, 1721—1729. (Provisional governor. During his absence, from 1724 to 1729, Arthur Middleton, President of the Council, administered the government.)
3. Robert Johnson, 1729—1735.
4. Thomas Broughton, 1735—1737. (Lieutenant-Governor acting governor, with full powers of governor.)
5. William Bull, 1737—1743. (President of the Council and Lieutenant-Governor acting governor.)
6. James Glen, 1743—1756.
7. William Henry Lyttelton, 1756—1760.
8. William Bull, 1760—1761. (Son of 5. Lieutenant-Governor acting governor.)
9. Thomas Boone, 1761—1764.
10. William Bull, 1764—1766. (Lieutenant-Governor acting governor.)
11. Lord Charles Greville Montagu, 1766—1773. (During the absences of Governor Montagu in 1768 and from 1769 to 1771 Lieutenant-Governor Bull acted as governor.)
12. William Bull, 1773—1775. (Lieutenant-Governor acting governor.)
13. Lord William Campbell, 1775.
14. Henry Laurens, 1775—1776. (President of the Council of Safety, an executive body organized from a congress of the people administering the government.)

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III.

Under State Government.

Presidents.

1. John Rutledge, 1776—1778.
2. Rawlins Lowndes, 1778—1779.

Governors.[1]

1. John Rutledge, 1779—1782.[2]
2. John Mathewes, 1782—1783.
3. Benjamin Guerard, 1783—1785.
4. William Moultrie, 1785—1787.
5. Thomas Pinckney, 1787—1789.
6. Charles Pinckney, 1789—1792.[3]
7. William Moultrie, 1792—1794.
8. Arnoldus Vander Horst, 1794—1796.
9. Charles Pinckney, 1796—1798.
10. Edward Rutledge, 1798—1800. (Died in January, 1800, and was succeeded by John Drayton, lieutenant-governor.)
11. John Drayton, 1800—1802. (Lieutenant-Governor succeeding Edward Rutledge, deceased; reëlected in December for a full term.)
12. James Burchell Richardson, 1802—1804.
13. Paul Hamilton, 1804—1806.
14. Charles Pinckney, 1806—1808.
15. John Drayton, 1808—1810.
16. Henry Middleton, 1810—1812.
17. Joseph Alston, 1812—1814.
18. David R. Williams, 1814—1816.
19. Andrew Pickens, 1816—1818.
20. John Geddes, 1818—1820.
21. Thomas Bennett, 1820—1822.
22. John Lyde Wilson, 1822—1824.
23. Richard Irving Manning, 1824—1826.
24. John Taylor, 1826—1828.
25. Stephen D. Miller, 1828—1830.
26. James Hamilton, Jr., 1830—1832.
27. Robert Y. Hayne, 1832—1834.
28. George McDuffie, 1834—1836.
29. Pierce Mason Butler, 1836—1838.
30. Patrick Noble, 1838—1840. (Died ————, 1840; succeeded by B. K. Henegan, lieutenant-governor.)
31. B. K. Henegan, 1840. (Lieutenant-Governor succeeding Patrick Noble, deceased.)
32. John Peter Richardson, 1840—1842. (Nephew of 12.)
33. James H. Hammond, 1842—1844.
34. William Aiken, 1844—1846.
35. David Johnson, 1846—1848.
36. Whitemarsh B. Seabrook, 1848—1850.
37. John Hugh Means, 1850—1852.
38. John Lawrence Manning, 1852—1854. (Son of 23.)
39. James Hopkins Adams, 1854—1856.
40. Robert F. W. Allston, 1856—1858.
41. William H. Gist, 1858—1860.
42. Francis Wilkinson Pickens, 1860—1862. (Son of 19.)
43. Milledge Luke Bonham, 1862—1864.

([1]The Constitution of 1778 fixed the meeting time of the General Assembly in January and the election of governor by that body followed at the session succeeding the general election for the General Assembly, which was held in the autumns of the even years.)

([2]Governor Rutledge's successor should have been chosen at the session of 1781, but the State being in the hands of the British no elections could be held in 1780 or 1781.)

([3]The Constitution of 1790 changed the meeting time of the General Assembly from January following general elections to November following, and when Governor Pinckney's term expired in 1791 he was reëlected for the short term ending November, 1792.)

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44. Andrew Gordon Magrath, 1864—1865. (Arrested by the Federal Government, sent to prison and deposed as governor.)
45. Benjamin Franklin Perry, June—November, 1865. (Provisional governor appointed by President Johnson.)
46. James Lawrence Orr, 1865—1868. (Deposed by Act of Federal Congress reconstructing the Southern States, General Canby acting as military governor until a new government could be established.)
47. Robert K. Scott, 1868—1872. (Elected under the new constitution; inaugurated in July; reëlected in December, 1870.)
48. Franklin J. Moses, Jr., 1872—1874.
49. Daniel H. Chamberlain, 1874—1876.
50. Wade Hampton, 1876—1879. (Reëlected for a second term in 1878; elected United States Senator and resigned in February, 1879; succeeded by W. D. Simpson, lieutenant-governor.)
51. William Dunlap Simpson, 1879—1880. (Lieutenant-Governor succeeding Wade Hampton in February; resigned in September, 1880, having been elected Chief-Justice of the Supreme Court.)
52. Thomas B. Jeter, 1880. (President of the Senate succeeding W. D. Simpson, resigned.)
53. Johnson Hagood, 1880—1882.
54. Hugh Smith Thompson, 1882—1886. (Reëlected for a second term in 1884; resigned in July, 1886, having been appointed Assistant Secretary of the Treasury of the United States by President Cleveland.)
55. John C. Sheppard, July—December, 1880. (Lieutenant-Governor succeeding Hugh S. Thompson, resigned.)
56. John Peter Richardson, 1886—1890. (Son of 32. Two terms.)
57. Benjamin Ryan Tillman, 1890—1894. (Two terms.)
58. John Gary Evans, 1894—1897.[1]
59. William H. Ellerbe, 1896—1899. (Elected for a second term in 1898, but died in June, 1899; succeeded by M. B. McSweeney, lieutenant-governor.)
60. Miles B. McSweeney, 1899—1903. (Lieutenant-Governor succeeding W. H. Ellerbe, deceased; reëlected in 1900 for a full term.)
61. Duncan Clinch Heyward, 1903—1907. (Two terms.)
62. Martin F. Ansel, 1907—.

Of these West, the second William Bull, and Charles Pinckney, governed three times each; Morton, Blake, Robert Johnson, John Rutledge, Moultrie, and Drayton, governed two separate times each, so that, with Godfrey and Arthur Middleton, South Carolina has had ninety-one rulers in all.

The Seal of the State.

By A. S. Salley, Jr.,

Secretary of the Historical Commission of South Carolina.

On March 26, 1776, the Provincial Congress of South Carolina set up an independent government and elected John Rutledge president. On Tuesday. April 2, 1776, the General Assembly passed the following:

Resolved That His Excellency the President and Commander in Chief by and with the Advice and Consent of the Privy Council may and he is hereby authorized to design and cause to be made a Great Seal of South-Carolina and until such a one can be made to fix upon a temporary Public Seal.

For a temporary seal President Rutledge used his private seal bearing his family coat-of-arms.

After the Declaration of Independence a design for the arms of an official great seal was prepared by William Henry Drayton, a member of the Privy Council, and, after some slight amendments thereto, was accepted and, together with a design for the reverse, turned over to an engraver in Charles Town to be engraved as a great seal. Both the arms and reverse symbolized the battle which took place at the unfinished and unnamed fort on Sullivan's Island (soon after named Moultrie), June 28, 1776. The following description of the seal as it appeared when finished is given by Governor Drayton in his father's *Memoirs* which he edited:

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[1]The Constitution of 1895 changed the meeting time of the General Assembly and the inauguration of the governor to January, thereby lengthening Governor Evans's term into 1897.)

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SEAL OF THE STATE OF SOUTH CAROLINA—ARMS



SEAL OF THE STATE OF SOUTH CAROLINA—REVERSE

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ARMS: A Palmetto-tree growing on the sea-shore, erect; at its base, a torn up Oak-tree, its branches lopped off, prostrate; *both proper*. Just below the branches of the Palmetto, two shields, pendent; one of them on the dexter side is inscribed March 26—the other on the sinister side July 4. Twelve Spears, *proper*, are bound crosswise to the stem of the Palmetto, their points raised; the band uniting them together, bearing the inscription QUIS SEPARABIT. Under the prostrate Oak, is inscribed MELIOREM LAPSA LOCAVIT; below which, appears in large figures 1776. At the Summit of the Exergue, are the words SOUTH CAROLINA, and at the bottom of the same, ANIMIS OPIBUSQUE PARATI.

REVERSE: A Woman walking on the Sea-shore, over swords and daggers; she holds in her dexter hand, a laurel branch—and in her sinister, the folds of her robe: she looks towards the sun, just rising above the sea; *all proper*. On the upper part, is the sky, azure. At the summit of the Exergue, are the words DUM SPIRO SPERO: and within the field below the figure, is inscribed the word SPES. The Seal is in the form of a circle, four inches in diameter; and four-tenths of an inch thick.

Governor Drayton gives the following interpolations of the devices of the seal:

It was not designed, until after the fort at Sullivan's Island, had defeated the British fleet, as all its devices will prove. The fort was constructed of the stems of the Palmetto-trees, (Corypha Palmetto,) which grow abundantly on our sea-islands—which grew on Sullivan's Island at the time the fort was made—when the battle was fought—and which grow there, at this day.

The ARMS, were designed by William Henry Drayton; and the original executed by him with a pen, bearing a great similitude to what is represented on the Seal, is in the possession of his son. It, however, contains more devices—but this is easily reconciled, by supposing, all he had designed was not deemed by the President and Privy Council, necessary for the Great Seal. The explanation of this side of the Seal, is the following. The Palmetto-tree on the Sea-shore, represents the fort on Sullivan's Island; the shields bearing March 26, and July 4, allude to the Constitution of South-Carolina, which was ratified on the first of those days; and to the Declaration of Independence, which was made by the Continental Congress, on the last of them. The twelve Spears, represent the twelve States, which first acceded to the Union. The dead Oak-tree, alludes to the British fleet, as being constructed of oak timbers—and it is prostrate under the Palmetto-tree, because, the fort, constructed of that tree, defeated the British fleet; hence, the inscription Meliorem Lapsa Locavit, is appropriately placed underneath it: under which, 1776 is in large figures—alluding to the year the Constitution for South-Carolina was passed—to the battle fought at Sullivan's Island—to the Declaration of Independence—and, to the year, when the Seal was ordered to be made.

The REVERSE, of the arms, is said to have been designed by Arthur Middleton, often mentioned in these Memoirs; and who was the father of Henry Middleton, at present Ambassador from the United States of America, to the Court of Russia. The Woman walking along the Sea-shore strown with swords and daggers, represents Hope overcoming dangers, which the Sun just rising, was about to disclose, in the occurrences of the 28th June 1776; while the laurel she holds, signifies the honours which Colonel Moultrie, his officers and men, gained on that auspicious day. The sun rising in great brilliancy above the Sea, indicates that the 28th of June was a fine day; it also bespeaks good fortune.

The engraver to whom the work of executing this great seal was entrusted must have completed his job and turned over the seal prior to May 22, 1777, as on that day President Rutledge issued a pardon under "the Seal of the said State," whereas prior to that time he had issued them under "the Temporary Seal" or "the Temporary Public Seal." Governor Drayton says:

The Author remembers seeing the mould or dye of the Great Seal, brought by the Artist who was engraving it, to his father William Henry Drayton, at his residence in Charlestown, for his inspection; but he cannot fix what particular time it was. From some circumstances which occurred, he believes it was not in the winter.

This great seal is never used now, because it is not convenient. In former days all papers that required the attachment of the great seal had a piece of red tape attached to them. This tape was inserted in a hole in the top of the mould made by the fastening together of the two halves of the seal. Melted beeswax was then poured into the same hole and after it had cooled the halves were unfastened and removed and there was a great seal pendant to the document. But that seal having been originally adopted as the great seal of the State, should be and is the pattern for all other seals of this State.

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The Mace.

By A. S. Salley, Jr.,

Secretary of the Historical Commission of South Carolina.



VISITORS to the Hall of the House of Representatives doubtless notice, not without some curiosity, the handsome silver, gold-burnished mace that hangs against the front of the Speaker's desk. That mace has just passed the century and a half mark, and has more of a history than the average mace of that age. As is shown by the hall-marks thereon, it was made in London in 1756 by Magdalen Feline, a plate worker then well known in London. In 1773 Josiah Quincy, Jr., a distinguished citizen of Massachusetts, visited Charles Town (now Charleston), and on the 19th of March made the following entry in his diary:

"Spent all the morning in hearing debates in the House and had an opportunity of hearing the best speakers in the Province. The first thing done at the meeting is to bring the mace—a very superb and elegant one, which cost 90 guineas—and lay it on the table before the Speaker."

During the Revolution this mace was carried off by some British sympathizers to Nassau, New Providence, where it was offered for sale to the House of Assembly of the Bahama Islands.

The records of the House of Assembly of the Bahamas at Nassau show that on the 25th of June, 1790:

"Mr. McKenzie moved that John Wells, Esquire, be empowered and authorized to purchase from the person or persons having custody of the silver mace of the late Assembly of the Province of South Carolina and that this House will provide for any sum or expenses incurred by reason of said purchase."

The records do not show that any further action was taken in relation to the mace, but many writers have assumed that it was purchased, and one writer has gone so far as to chronicle the wanderings of the mace from South Carolina to the Bahamas, and another writer has asserted that "As a matter of fact, it was about 10 years before the purchase was effected and appropriation passed to cover the cost of the mace and the speaker's robe." But, "as a matter of fact", it was never purchased at all and the mace now in Nassau and supposed to be the South Carolina mace was made in London in 1799, as shown by records in London and by the hallmarks on the mace itself. Mr. Harcourt G. Malcolm, a member of the Bahama House of Assembly and an authority on such matters in the Bahamas, says, in a letter to Mr. J. S. Churchill, Colonial Secretary of the Bahamas, dated February 23, 1903:

"Last summer when our mace was in London for the purpose of being regilded and repaired, it was inspected at the Assay Office. The officials of that office fixed the date of its manufacture at 1799, and the records of that office also disclosed the fact that it had been made by Lewis Pantin, a small worker, whose address was 62 St. Martin's le Grand, at present part of the site of the General Postoffice building.

"The date given by the Assay Office was also corroborated by Mr. W. H. St. John Hope, of the Society of Antiquaries.

"This is further substantiated by the votes of the House of Assembly. For on the 8th of December, 1800, the following item appears in the resolution arrived at in a committee of the whole house on petitions, estimates and accounts:

"'To Alexander C. Wylly, Esquire, for amount paid by him for a mace, speaker's gown, etc., £269-10-0.'"

The writer goes on to say that Mr. Wylly had been Speaker of the House from October 30, 1798, to November 17, 1800, when it became necessary to elect a successor to him in consequence of his absence from the colony; that he had returned to Nassau on November 28, 1800, and was refunded the amount which he had paid out for the mace and robe as described above, and that it seemed "a plausible suggestion that he brought it with him."

There are some who indulge in silly twaddle about our mace being the Cromwell "bauble" mace, notwithstanding that it contains the arms of the House of Hanover. Mr. Malcolm, referring to the same idea existing in connection with the mace in the Bahamas, says:

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"In connection with the 'Cromwell bauble' theory, which I believe exists or has existed in nearly every British West Indian colony which possesses a mace, I might mention that Mr. Hope showed me in London last summer a book on 'English Maces' of which he is joint owner. And the part of this book which treats of the present mace of the House of Commons apparently proves that that mace is the original 'bauble.'"

It is also interesting to note what Samuel Rawson Gardiner, in his "A History of the Commonwealth and Protectorate, 1649-60" (London: Longman), says of the mace of Cromwell's time. He says:

"The final words of the scene were not the 'Take away this bauble' of popular tradition, but 'What shall we do with this bauble? Here, take it away!' Capt. Scott removed the mace whose fate was so little regarded that it lay for many subsequent months in the private house of Worsley, the commander of the detachment which carried out the coup d'etat."

When the Hon. Langdon Cheves became president of the Bank of the United States in Philadelphia in 1819 he found the South Carolina mace there in a vault. It had the arms of the royal Province of South Carolina on it, by which it was identified. He restored it to his native State, where it has been ever since.

As will be seen by Quincy's comments it was formerly used in the ceremony of opening the proceedings of the House, by bringing it in and laying it on the Speaker's desk. That ceremonial is not kept up now, and there is not on the Speaker's desk a proper rack for it. It is one of the surviving evidences of the broad culture of the people of the Province of South Carolina.

An Historic Chair.

BY DR. J. W. BABCOCK.

In connection with the mace described above, an illustration is given of another interesting historical relic, a chair, which has long been preserved in the Library of the University of South Carolina. This chair was presented to the Library over fifty years ago, as the accompanying note shows:



"Preston Place, February, 1856.

"Dear Sir: Seeing that you have thought proper to place a cast of my bust in the Library, it has occurred to me, etc., etc.

"I also give to the Library a huge mutilated mahogany chair, the tradition in regard to which is that it was the *quasi* throne of the Colonial Governors of our State. I am, dear sir,

"Your obedient servant,

"WM. C. PRESTON.

"MR. MCMASTER, Librarian."

The chair is, technically speaking, a Chippendale State chair. It is thus interesting to the historian as well as to the antiquarian. It is of unusually large dimensions,* and even in its mutilated condition commanded the attention of the casual visitor to the Library. The arm terminates in a handsomely carved eagle's head curved upon itself, and the upper portion of the front legs have a carved fringe, continuing the effect of the fringe that originally hung from the lower edge of the seat at the front and sides. At the back of the top rail three mortises with screw holes seem to indicate that

*Height of back from floor, 53½ in.; height of seat, 26 in.; length of seat, 21 in.; width of seat between arms, 25 in.; width of seat at back, 22½ in.; width between arms, 31 in.; height of arms, 36¼ in.; width of back at top, 26½ in.; height of back from seat, 31 in.; width between front feet, 22¾ in.; width between back feet, 16½ in.; space between front and back feet, 20½ in.

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originally ornaments,—possibly the British coat-of-arms or other emblem of authority,—were attached thereto in order to lend significance as well as to give finish to the chair.

A picture of this antique chair is given in "The Old Furniture Book" by Mrs. N. Hudson Moore, who ascribes it to a very early period of Chippendale's work [about 1740-1750] when he was still content to copy, for the front legs show the bear's paw, while the rear ones are the familiar Dutch foot. This would place the time of its production and probable importation from London during the governorship of James Glen (1738-1756), or possibly of his successor, William Henry Lyttleton (1756-1760).

Unfortunately, furniture bears no hall marks or other signs by which its exact date may be arrived at. This chair is unquestionably a "State chair" of the early Chippendale period, if not of his own workmanship,—in fact, it is much handsomer than a similar chair in Independence Hall, Philadelphia,—and its "mutilation" may have been due to the vicissitudes of the Revolution. If the tradition about it be true, it probably once held a place of honor in the old State House in Charlestown. Careful research, however, has failed as yet to discover any reference to the chair earlier than the presentation note of Wm. C. Preston, nor is it known how it came into his possession.

Just prior to the centennial celebration of the college in January, 1905, the right arm and side attachments to the tops of the legs of the chair were "restored" by order of the Board of Trustees, so that it would be in condition for use on that and other State occasions. But the restoration was done with absolute regard for the original design, no attempt being made to embellish or "glorify" the original conception of the master craftsman who designed and made this grand old chair. It thus appears that after being left in innocuous desuetude for one hundred and twenty-five years, the venerable "throne" has resumed an honorable career. *Esto perpetua!*

PUBLIC CHARITY IN SOUTH CAROLINA

By J. W. BABCOCK

Physician and Superintendent State Hospital for the Insane*

Public charity in South Carolina dates back almost to the permanent settlement at Charles Town, having for precedent or basis the Poor Laws of England. The earliest Act for the poor was passed June 20, 1694, but the title alone has come down to us. Under the Proprietary Government there were passed, in all, five Acts dealing with public charities.

In 1722, shortly after the change to the Royal Government, the Assembly passed an Act authorizing the wardens and five vestrymen to levy assessments for the maintenance of the poor who had been residents of their parish twelve months. A more effectual Act for the relief of the poor was passed in 1737, to which amendments were made in 1738 and 1751. One of the most interesting sections of the Act of 1751 is that "providing for the subsistence of slaves, who may become lunatick, while belonging to persons too poor to care for them." By this section justices of the peace and overseers of the poor are required upon notice to cause such lunatic slaves to be secured in some convenient place in the parish as well to prevent their doing mischief as for the better subsisting of such lunatic slaves, the expenses to be borne by the parish. It thus appears that the earliest legal recognition of the claims of the insane in South Carolina addressed itself toward providing for lunatic negro slaves.

Of the charitable organizations in Charlestown, one of the earliest was the Fellowship Society, which was begun April 4, 1762, and incorporated in 1769. The Act of incorporation was presented for approval at the Court of St. James, June 17, 1770, before the King's Most Excellent Majesty, and his Cabinet. The original purpose of this society was the founding of an infirmary or hospital for

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*Portions of this paper appeared in the centennial edition of the Charleston *News and Courier* (1903) and in the hospital report for 1904. Considerable additional information has now been brought together and statistical and financial tables have been added. It is hoped that by placing in permanent and accessible form this imperfect study of an important subject renewed and intelligent interest may be taken in the welfare of the hospital.

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the reception of lunatics and other distempered persons in the Province. (McCrady.) Furthermore, Mills says that the Fellowship Society "was originally intended to cover under its sheltering wing the deplorable maniac, and for that purpose it appropriated one-half of its funds, near $2,000."

No evidence has been found that a hospital was built, which is not surprising, when we recollect that the Revolutionary struggle came on soon after the incorporation of the society. However, an old certificate of membership of the Fellowship Society shows a representation of a three-storied building, composed of a central structure, with two projecting wings, evidently planned for hospital purposes. This effort was the second attempt, so far as known, to provide for the insane in the Colonies. (Yates Snowden.) In the controversy with Christopher Gadsden upon the Stamp Act (1776), William Henry Drayton makes reference to a mad house existing in Charlestown at the time. (McCrady.)

From Mayor Courtenay's annual review, in the "Year Book of the City of Charleston" for 1880, we learn that this institution (the Alms House) dates back to 1712, and, perhaps, an earlier date in our Colonial history * * * On May 20, 1755, the Provincial Assembly voted "four hundred pounds sterling for an additional building, and a further sum of six hundred pounds sterling for the maintenance of the poor in St. Philip's parish." On April 12, 1768, an Act was passed authorizing "the Commissioners of the Exchange and Custom House to erect a Poor House (and Hospital) on the four acres of ground belonging to the city, on which the Work House and Brick Barracks then stood." By this Act the said Commissioners were authorized "to issue certificates not exceeding £10,000; and the high duty on wine was continued to risk said certificates." In the "Year Book" for 1881, page 340, it appears that a hospital was also included in the purposes of this Act. For many years the alms house received support from the Legislature for the transient poor, as is further shown in Mayor Courtenay's record, varying from £1,000 annually, 1785-1795, to $12,000, 1820-1825. The Legislature continued to make annual appropriations for transient poor, subject to order of the City Council of Charleston, until the close of the Civil War.

The modern development of asylums with better care for the insane takes its origin from the humane efforts of Pinel, in France, in 1791, and Tuke, in England, in 1796. In the United States, neither the last quarter of the eighteenth century, nor the period of unrest, which resulted in the War of 1812, was favorable to the development of charitable institutions.

Some years later, in 1826, Mills says in his "Statistics," in discussing the benevolent institutions of Charleston: "The poor house, and asylum (for lunatic persons), situate near the corner of Queen, on Mazyck street * * * * was founded at a very early period; it is built of brick, three stories high and crowned with a large cupola * * * * the number of paupers and outdoor pensioners averages 983 in the year; of these, twenty are lunatic persons, who are placed in an outbuilding by themselves."

In December, 1808, Judges of Courts of Common Pleas in South Carolina were vested with the same powers as Courts of Equity to inquire into cases of lunacy or idiocy and to appoint guardians for the same.

In passing, it is worth while to call attention to the case of Wm. Linnen, who, on the 6th of May, 1815, fatally wounded Dr. David Ramsay, of Charleston, who had served his adopted State most zealously as statesman and historian. For this crime Linnen was placed in confinement, probably in jail in Charleston, as a maniac. (Memoir of Dr. Ramsay.)

The foregoing are some of the bare facts of the history of our State, rescued from musty records and interesting, perhaps, only to the specialist of the Dryasdust type. But would it not be more interesting to us all if we could learn something of the individuals and the observations and experiences which led them to make the tentative propositions which, after securing the approval of the majority of the lawmakers, became "Acts and laws"? In this crystallized form they have come down to us, but the journals and records of the men themselves and their reasons for their proposed enactments are probably forever lost, the pioneers in this work thus sharing the fate common to many men who contributed to the early development of South Carolina. Lists of the names of the beneficiaries, with relief afforded, still exist down to 1783. (Year Book, 1881, p. 333.)

In the Colonies the needs of better provision for the insane had long been felt. Before the time of Pinel and Tuke, the Pennsylvania Hospital, founded in Philadelphia, in 1752, by Benjamin Franklin and his associates, had a building for lunatics adjoining its wards for the sick. This provision marks the earliest hospital care for the insane in the United States, our Fellowship Society following soon afterwards. But it was not until 1842 that the broad-minded managers

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of the Pennsylvania Hospital separated their insane patients in adequate structures remote from their sick wards.

The first separate insane hospital in this country was established by Virginia, at Williamsburg, in 1773. The next—The Friends' Asylum—was founded by a private corporation of Quakers, near Philadelphia, in 1817; another private institution—The McLean Asylum, near Boston, in 1818, and similarly another—Bloomingdale Asylum—in New York, in 1821.

Upon reflection it is clear, as has already been pointed out, that the early efforts among the Colonies in behalf of the insane received a setback during the Revolution, from which they did not recover, till after the War of 1812 in South Carolina, as well as in other parts of the country.

In a memoir of William Crafts, it is mentioned incidentally that in the session of the South Carolina Legislature in 1813, "the late Col. Farrow, of Spartanburg, projected the establishment of a lunatic asylum, but it failed at that time from the situation of the country, which required all its moneyed resources in resisting a powerful enemy."

Another account* says that Capt. Farrow was elected to Congress in 1812 and reëlected in 1814. While in Congress he conceived the idea of his State building an asylum for the insane and one for the deaf and dumb. He declined reëlection to Congress in 1816 and declared himself a candidate for the House of Representatives of the General Assembly of South Carolina for the avowed purpose of establishing a lunatic asylum and a school for the deaf and dumb. He was elected and reëlected until finally, in 1821, he secured an appropriation of seventy [thirty] thousand dollars to establish the lunatic asylum, and it was only a few years until the school for the deaf and dumb was also established."

This brings us at last to the individual, Samuel Farrow, who not only saw the needs of the insane existing in his own time, but who after years of persistent effort so impressed his belief upon his fellow-members of the General Assembly that an appropriation of $30,000 for the establishing a lunatic asylum was made finally in 1821.

Let us look up his history. Samuel Farrow (1760-1824) has rightly been called the "Father of the Asylum." From a sketch of him by Judge O'Neall we learn that Mr. Farrow was one of the pioneer lawyers of the up-country, who, without the advantages of a liberal education, struggled through difficulties till he won fame at the bar and in the State and National Legislatures. He was born in Virginia, and was brought in infancy to South Carolina by his parents, who settled about 1765 in Spartanburg District. Farrow was a patriot of '76, was once made prisoner by the British and bore upon his face a scar, resulting from a sword cut received in battle. After the war he studied law and was admitted to the bar in 1793. In 1810 he was Lieutenant-Governor of the State, member of Congress, 1813-16, and of the State Legislature, 1816-21. Judge O'Neall says the asylum "originated with Mr. Farrow from seeing by the roadside, on his way to Columbia, a poor woman, from Greenville, who, at the sessions of the Legislature, visited Columbia for many years." There are several variations of this legend, but of Mr. Farrow's experience and sympathy with the insane there can be no doubt. In the Waters' Genealogy, already quoted from, it is stated that "After his success with the asylum Mr. Farrow declined further public honors and died in 1824. He is buried at the old home-place near Musgrove's Mill, and the inscription on his tomb reads:

"'SAMUEL FARROW.

"'Died in 1824 in the 63rd year of his age.
"'He was feared by the Tories and loved by the Whigs.
"'A lawyer by profession and an honest man.'"

But with all his perseverance, Samuel Farrow did not succeed in his efforts to get the Legislature to found an asylum till he secured the coöperation of Wm. Crafts, Jr., of Charleston.

In many respects William Crafts (1787-1826) was the counterpart of Farrow. He was born in Charleston, where he received all the advantages of early educational training. Subsequently he was placed under care of the experienced Dr. Gardiner, of Boston, to prepare for college. He was graduated with distinction from Harvard, in 1807, and two years later was admitted to the bar in Charleston, afterwards leading a brilliant career as lawyer, statesman, orator, editor, poet. In connection with his main scheme of popular education, Mr.

*"A Genealogical History of the Waters and Kindred Families," by P. B. Waters and H. M. Millam, Atlanta, 1903.

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Crafts was especially interested in the establishment of a school for the deaf and dumb. His efforts in behalf of founding the South Carolina Medical College deserves special recognition. Mr. Crafts's eminent services in the development of the public school system form part of the educational history of the State, and have been recognized through the interest of the Hon. W. A. Courtenay, by naming one of the schools of Charleston for him.

Portraits of these two worthy Carolinians adorn the walls of the principal reception room of the State Hospital in Columbia, and are herewith reproduced. Brief biographical sketches of them may be found in O'Neall's "Bench and Bar of South Carolina," to which my indebtedness is gratefully acknowledged.

The slow evolution of the movement for an asylum is indicated by these extracts from the Reports and Resolutions of the General Assembly of the State of South Carolina for the year 1818:

"In the House of Representatives, Dec. 9th, 1818.

"The special committee, to whom was referred the resolution relative to Lunatics, are unanimously agreed that those unfortunate beings highly deserve the attention and patronage of the Legislature. Your committee have ascertained from the best information, that great many lunatics are now at large unsheltered and unprovided for; they therefore beg leave respectfully to submit the following resolutions:

"*Resolved,* That an asylum be provided at the expense of the State for the reception of Lunatics from the different districts.

"*Resolved,* that the Civil and Military Engineer be directed to devise and draw the most economical plan of a building suitable for the accommodation of —— Lunatics, and report the same at the next session of the Legislature, with an estimate of the expence attending the erection of such a building.

"*Resolved,* That the neighbourhood of Columbia is—in the opinion of the committee, the most eligible site for such a building, because it will be within the reach of medical assistance, and of the superintendence of the legislature.

"*Ordered,* That the resolution be sent to the Senate for their concurrence.

"By order of the House. R. Anderson, C. H. R.

"In the Senate, Dec. 9th, 1818.

"*Resolved, unanimously,* That this House do concur in the report. *Ordered,* that the same be returned to the house of representatives.

"By order of the Senate. W. D. Martin, C. S."

Through the combined efforts of these two distinguished men—Messrs. Farrow and Crafts—an Act was finally passed by the General Assembly, December 21, 1821, authorizing the erection of suitable buildings for a lunatic asylum and a school for the deaf and dumb. Under this Act a Commission was appointed, consisting of Governor Thomas Bennett, the Intendant of Charleston, Elias Horry, John L. Wilson (the next Governor), Dr. James Davis (subsequently the first physician), Dr. Edward Fisher and Thomas Taylor, Jr., who were empowered to draw from the State Treasury $30,000 with which to purchase sites and erect suitable buildings of brick or stone for the purposes of the asylum and school.

The Commission collected information about the defectives of the State, showing that there were 55 lunatics and 29 deaf mutes, and reported that they had purchased a square of four acres within the town of Columbia. They furthermore reported that it was not feasible to have the asylum and school together.

Writing about 1826, Mills, to whose "Statistics" reference has already been made, says in describing Columbia: "The asylum for lunatic persons is another of those institutions established by the liberality of the State in this place. The building is now nearly finished and will probably soon go into operation. The design of it is both novel and convenient. It combines elegance with permanence, economy and security from fire. The rooms are vaulted with brick and the roof covered with copper. The building is large enough to accommodate upwards of 120 patients, besides furnishing spacious corridors, hospitals, refectories, a medical hall, several parlors, keepers' apartments, kitchens and sundry offices. The whole is surrounded by a lofty enclosure. The cost of the whole is considerably within $100,000. Similar buildings executed at the North and

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in England of equal accommodations, yet not made fire-proof, have exceeded this sum. The facade of this asylum represents a center and two wings, and is crowned with a large cupola, opened all around, with sashed windows, which serve the purpose of a ventilator to the hospital story.



ROBERT MILLS, DESIGNER OF THE ORIGINAL BUILDING.

"The entrance of the center building is under a grand portico of six massive Greek Doric columns, four feet in diameter, elevated on an open arcade, and rising the entire height of the wing buildings; the whole surrounded with a pediment. Only two sections of the wings are now built, one on each side. These, with the center, being considered sufficient to answer the present demands of the country. The design, however, is such that, without disturbing its symmetry, any additional accommodations may be made. The plan, when completed, according to the original design, will sweep a semi-circle, or horse-shoe figure, and enclose a spacious court to the south."

Such is the description of the asylum given by Robert Mills, but not one word does he say about the architect, nor was the name of the architect known till quite recently. Curiously enough, a set of the plans and elevations of the "asylum at Columbia, S. C.," was found in an attic of an old Massachusetts asylum a few years ago and sent to the writer by Dr. George T. Tuttle, Superintendent of the McLean Hospital, Waverley, Mass. Upon one of these plans is the inscription: "Designed by Robert Mills, Engr. & Archt." But for this discovery and record, the name of the forgotten architect would probably have remained unknown for some years longer. Mills, then, was no doubt the designer of one of the earliest asylums erected in this country, and the building left by him is today probably the oldest existing asylum building in the United States erected by a State for its insane. Let us learn, so far as we may, who Mills was.

Robert Mills (1781-1855) was born in Charleston, being descended on the maternal side from Landgrave Smith, of the Proprietary period. In 1802 the Trustees of South Carolina College divided between Mills and another architect named Clark the premium of $300 offered for general plans for the College and grounds. In 1820 he was appointed State Architect and Engineer of South Carolina. It was while holding this position that he became the architect for designing the original asylum building. In 1837, President Jackson made him Architect of the General Government, and he held this position until 1851. Under this and the next administration, Mills designed custom houses and marine hospitals from New Orleans to Massachusetts. He had charge of the erection of the Treasury Building in Washington, D. C., the postoffice and the patent office buildings. Mills's designs for the National Washington Monument were accepted over many competitors. This was perhaps his crowning work.

The portrait of Mills is reproduced from Glenn Brown's "History of the United States Capitol," with the author's kind permission.

Mills says of himself in his "Statistics" (pp. 466-67) that he was "the first native American that entered on the study of architecture and engineering in the United States—these he pursued under the celebrated Latrobe." He says he designed the first monument erected to Washington, that his designs for Bunker Hill Monument were accepted, that he designed and erected a great bridge over the Schuylkill near Philadelphia, a penitentiary at New Orleans, and that "many years ago" he made a present to this State of a plan of a penitentiary to induce it to adopt this institution into the State.

It deserves mention that of the two founders, one an elderly man and the other comparatively young, neither lived to see the result of their combined

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labors, for Mr. Farrow died in 1824 and Mr. Crafts in 1826. The Asylum was not completed till 1828.

The accessible records fail to show that activity among the body of physicians through the State that one would expect in the foundation of a lunatic asylum. At least, I have not been able to discover any such. But this must be due either to an oversight, or to the traditional unwillingness of the profession to "advertise." Both Mr. Farrow and Mr. Crafts were lawyers. But on the original Commission were two doctors, and Dr. Trezevant was a leading member of the first Board of Regents and served in that capacity until he was subsequently made Physician to the Asylum.

A general idea of the number of dependents and defectives in this State in 1826 may be had from this table, compiled from Mills's "Statistics":

	Paupers.	Deaf and Dumb.	Blind.	Lunatics.
Abbeville	60	very few	very few	very few
Barnwell	4	.....	.....	.....
Beaufort	.....	few	few	some
Charleston	963	.....	.....	2[illegible]
Chester	25	15	7	3
Chesterfield	20	1	0	1
Colleton	.....	.....	.....	.....
Darlington	"It's proportion."			
Edgefield	"About 50."			
Fairfield	30	.....	.....	none known
Georgetown	.....	few	few	few
Greenville	25	.....	.....	.....
Horry	8 or 10	2	.....	none
Kershaw	.....	.....	.....	.....
Lancaster	.....	.....	.....	.....
Laurens	.....	.....	.....	.....
Lexington	few	.....	.....	.....
Marion	10 or 12	2	.....	none
Marlboro	10 or 12	.....	.....	.....
Newberry	few	2	1 or 2	2
Orangeburg	5	1	1	0
Pendleton	.....	.....	.....	.....
Richland	few	2 or 3	2 or 3	4 or 5
Spartanburg	27	2	1	0
Sumter	.....	.....	.....	.....
Union	.....	.....	.....	.....
Williamsburg	20	.....	.....	.....
York	.....	.....	.....	.....

On December 18, 1827, was passed an Act to carry into operation the Lunatic Asylum, and though subsequently found defective in many respects, some of its provisions remain in force to this day.

As the construction of the Asylum proceeded slowly, it was not ready for occupation for another year—six years after its foundations were laid.

Although all the privileges of the new institution were extended to citizens of other States as well as to our own, no applications for admission were received for some time. When the first annual report went to the General Assembly no patient had been admitted. In that report it is stated: "The Regents regret that an establishment every way calculated to do honor to the intelligence and philanthropy of the State, should not, hitherto, have met with a success commensurate either with their wishes or the bounty of the Government." After a careful consideration of the subject they report several defects in the law "as the leading causes of the disappointment of this benevolent plan for the relief of the most dreadful malady to which our common nature is liable."

While the Legislature was still in session—December 12, 1828—a young white woman was received as the first patient, and her mother was made matron to look after her.

In 1829 the Regents and Physician still considered the Asylum an experiment, and advertised for patients in the newspapers of this and adjoining States.

At a later period Dr. Trezevant wrote out of the fullness of his knowledge of the subject: "Our institution has never been a popular one. Owing to the improper conduct of those who were employed in planning and erecting the

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building the Legislature was grossly deceived; large sums of money were constantly called for and uselessly expended, and when, at last, the building was completed, so thoroughly disgusted had it become that the Asylum was a bye-word and a reproach and our friends hardly dared advocate it in our Halls. Money was not to be obtained for properly fitting it up, and the Regents never had it in their power to do for its inmates what their situation really required."

In November, 1830, the Regents recommended that the General Assembly pass an Act to render it obligatory on all persons and bodies corporate having charge of idiots, lunatics and epileptics to send them to the Asylum and support them there at the expense of the city, town, parish, etc., chargeable with their support.

In 1831, because of lack of funds to maintain the institution, the Regents were upon the point of resigning, when Governor Hamilton came to their relief with $654 from his contingent fund and thus tided over a crisis. But it was several years before the institution was established upon a firm footing. In fact, the



MILLS BUILDING, STATE HOSPITAL FOR THE INSANE—FOUNDATIONS LAID IN 1822.
Probably the oldest building now standing in the United States built by a State for the Insane.

continuance of the Asylum seems to have been uncertain till 1836, when it was completely reorganized.

In passing, it deserves to be emphasized that for many years patients were received at the Columbia Asylum from other Southern States which were lacking in such accommodations for their unfortunate citizens. Georgia opened her asylum in 1844; North Carolina in 1856; Alabama in 1860; while Georgia and South Carolina divided the care of Florida's insane down to 1877, and were duly paid therefor each quarter. When the neighboring States, however, did undertake the care of their insane, the location of the South Carolina Asylum in a city served as a warning to them to place their institutions in the country and in the neighborhood of large towns, usually the capitals of the States. The intramural location of our Asylum has had its drawbacks as well as advantages since its opening.

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MANAGEMENT.

The management of the Asylum was vested in a Board of nine Regents, who were elected by both branches of the Legislature and were empowered to fill vacancies till the next regular session of the General Assembly. The original Board consisted of Wm. F. DeSaussure, President; Robert Henry, D. H. Trezevant, Abraham Blanding, Wm. C. Preston, D. J. McCord, E. W. Johnson, B. F. Taylor and Edward Fisher. Subsequently upon the Board have served some of the noted men of the State. Among these may be mentioned: Andrew Wallace, Dr. Thomas Cooper, Maximilian LaBorde, Francis Lieber, the Rev. P. J. Shand, John S. Preston, Dr. A. N. Talley and Dr. B. W. Taylor. Down to about 1880, citizens of Columbia were usually elected to serve on the Board, receiving no pay. For the next twelve years one member was appointed by the Governor from each Congressional District. In 1892 the Board was reduced to five members, appointed by the Governor, to serve six years. They now receive a per diem and mileage.

The Regents have always endeavored to administer their charge upon principles of the broadest charity. Their efforts have been towards extending rather than restricting the functions of the Asylum. To the classes of idiots, lunatics and epileptics originally provided for have been added, from time to time, inebriates, criminals, "dotards," paupers, and even cases of nervous disease. In fact, the institution has served as a receptacle for the undesirable members of many communities not otherwise provided for. It is matter of record that till 1902 non-residents of this State were often admitted—long after neighboring States had adopted an exclusive policy towards citizens of this State, who were stricken while in their midst, or before they had been residents there long enough, two years, to acquire "settlement."

GROWTH AND DEVELOPMENT.

In the '30's. after the purposes and uses of the institution had been recognized by the public, the Asylum began to grow in spite of adverse conditions. Although the plans prepared by Robert Mills were never fully carried out, but were wisely modified, additions were made to the original structure constituting the old Asylum, about every ten years, to meet the growing demands. By 1848 it had reached the limits of the square of four acres, upon which its foundation stone had been laid. Meanwhile, about forty acres of land lying east of the Asylum had been secured for gardening and farming purposes. The location of the institution practically within the city has always proved a serious drawback. By 1848 demands for the admission of new patients forced the question of the advisability of erecting new buildings near the old site in Columbia, or selling the buildings and land and moving into the country. Upon this question there was difference of opinion among the Regents, the physicians and the General Assembly. At one time the controversy was so bitter that it almost led to a duel. Finally, the General Assembly, in 1856, took the matter in hand, and directed that new wards be constructed upon the land lying east of Pickens street. When the annual report was prepared there was a total of 171 patients in the institution, and the admissions for the year had been 67. Previously, Dr. Trezevant had expressed the opinion that the State might in the future be required to furnish accommodations for as many as 400 patients annually. In view of the ever-increasing demands in recent times for the admission of more and more patients (the number of new patients for several years has been over 500 and the total number under care was 1,849 in 1906), we can now see that a mistake was made in 1856 in keeping the Asylum in the city. The Regents have been forced to purchase, from time to time, at seemingly high prices, such tracts of adjacent land as were offered for sale, and the patients have never been able to have the amount of liberty they might have, were the institution located a few miles in the country.

But in the '40's and '50's not even the most far-seeing statesman could foretell what demands the future would bring to all civilized communities for providing for the insane. But by that decision in 1856 our State was committed, for many years at least, to the policy of maintaining its insane wards practically within the limits of a city.

By the beginning of the Civil War, two sections of the new Asylum building, each three stories high, had been erected. But the total acreage owned by the institution was less than fifty. Although additional land was rented for farming purposes, it was many years before the Regents were able to secure small adjoining tracts for tillage and pasturage.

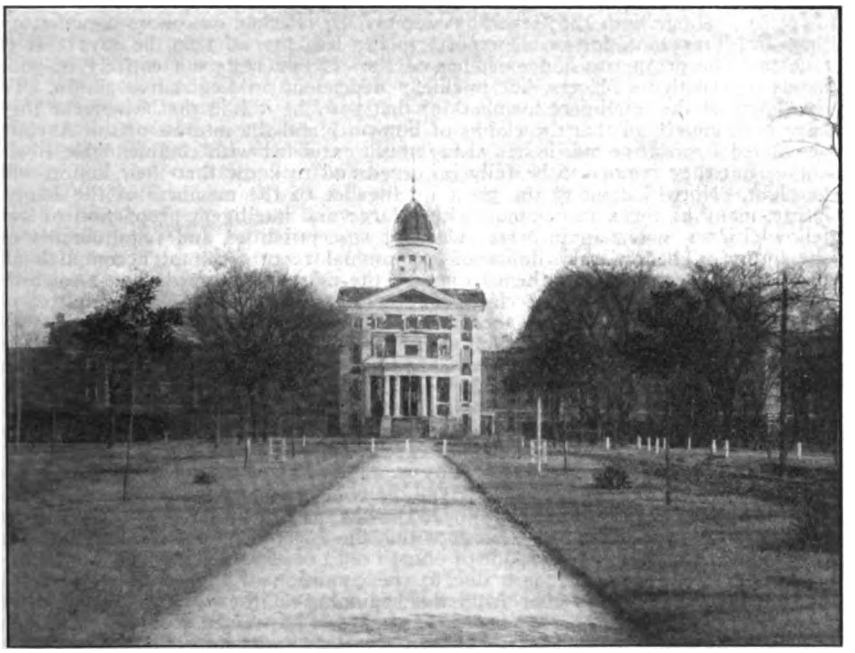
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INTERNAL MANAGEMENT.

At first, the Superintendents of the Asylum were laymen—practically head-keepers, who were frequently changed. Dr. James Davis, one of the original Commissioners, served as Visiting Physician from 1828 till 1836, when he resigned, and a system of internal management, which Dr. Davis had long advocated, was inaugurated by the appointment of Dr. J. W. Parker, of Abbeville, as Resident Physician and Superintendent, and of Dr. D. H. Trezevant, of Columbia, as Visiting Physician.

Dr. Trezevant had been a member of the original Board of Regents. He seems to have had very broad views regarding the care of the insane and also of their needs. His reports are evidently the productions of a well-trained mind and show the experienced physician and alienist. He had his own opinions and these he expressed vigorously, as witness these extracts:

In 1853 he says: "That I am anxious about our Asylum, I do not deny. I have been connected with it from the time the first patient entered its walls up to the present moment. I was with it when it was viewed with pride, and I thought that our little State was far in advance of our sisters, though I then saw much that was faulty in its construction. In 1835 I became aware that we were falling behind. In 1840 we were distanced, and it was painful in '45 and



MAIN BUILDING, STATE HOSPITAL FOR THE INSANE—COMPLETED IN 1885.

'50 to see how inferior were our accommodations, when compared with those of other institutions."

Again in the same report he says with reference to the Legislature and appropriations:

"I confess I do not look to the purse of the Legislature when I am acting for the insane. My thoughts are first and principally to what is most for their benefit; next, to what will assist the keepers and officers; and lastly, to the amount necessary to be expended. Who is there who claims to be civilized, who would on his return home, boast to his constituents of having saved $20,000 by curtailing the comforts of the insane?—that he had voted against the solicited appropriation, and given to them a prison—that he could not see the utility of giving them comforts—that he had asked what they wanted with light and airy rooms, extended corridors and fine verandahs?—that in his opinion, they should be shut up in dark cells at night, made to sleep, and in the day they could walk out very well in the yard? Would such a speech be permitted?"

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Or, again, this regarding removal into the country, for which he was an ardent advocate: "This has been with me a subject of deep and anxious thought, and eighteen years ago, when President of the Board of Regents, I urged on the Joint Committee of the two Houses, the propriety of abandoning this edifice (the original Asylum) and erecting one better adapted to our wants."

Dr. Trezevant had the courage of his convictions, for when his wise proposal of removing the institution into the country failed to secure Legislative sanction, he and some of the Regents of his way of thinking resigned as officers of the Asylum. To use his own words, Dr. Trezevant was for thirty years "intimately connected with the Asylum for the Insane."

In 1870, Dr. Ensor, in his first report, quotes from Dr. Trezevant's reports at length, saying: "There are few men in this country whose opinions upon the care and management of the insane are worth more than Dr. Trezevant's."

Dr. Parker, who now became Physician and Superintendent of the Asylum, was an advocate for continuing the institution in the city of Columbia. As Resident Physician he had long devoted himself to its interests with wonderful singleness of purpose. Few men and no physicians have left greater claims to be remembered by the State. In all, he devoted over forty-five years of his life to the service of the insane in this institution. His experience and skill in management, coupled with a sublime faith in his mission, alone carried the Asylum through the dark days of the war and its direful sequels.

In his dealings with the General Assembly, Dr. Parker was more conciliatory than Dr. Trezevant, for in his reports to the Regents, in 1860, he says: "It is true that the prosperity and existence of the Asylum rests not entirely in your hands, nor with its officers, but is chiefly dependent on Legislative action. To the honor of the intelligent members of that body be it said that whenever they have been convinced that the claims of humanity and the interest of the Asylum demanded Legislative aid, it has always been extended with commendable liberality. But they require to be fully informed and to know that their action will be right. Notwithstanding the great intelligence of the members of the Legislature, many of them, in common with a large and intelligent proportion of our fellow-citizens, entertain incorrect ideas of susceptibilities and requirements of the insane. The ordinary limits of our annual reports cannot accomplish all that is necessary to enable them to pursue the most enlightened course towards this class. I, therefore, respectfully suggest the appointment of a Committee of Regents, who will undertake the duty of communicating fully and freely all matters connected with the Asylum, and, if they deem it proper, memorialize the Legislature for aid to carry on necessary improvements and buildings and finish such work as may have been commenced."

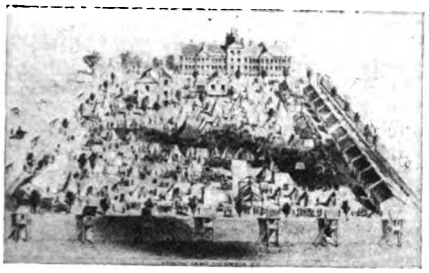
In part, the following paragraphs on the history of the Asylum, 1861-65, prepared by the writer for another occasion, bring out the salient points of that eventful period and reveal in detail the great value of Dr. Parker's services.

The difficulties of maintaining a daily average of about 200 persons during the earlier years of the war appear trivial in comparison with later experiences. For instance, it is recorded that in 1863, "the past year has been marked by peculiar trials and difficulties. Never within the experience of the oldest member of this Board has such an amount of effort been necessary to conduct the administration. These difficulties are due to the condition of the country. It is no figure of rhetoric to say that from the beginning of the year to its close the existence of the institution has been one of severe, protracted struggle. Without money to purchase the necessary supplies, the Board was compelled to look elsewhere than its treasury for support." The Governor was unable to furnish aid from the contingent fund, because it was already too small to meet the demands upon it for the military wants of the State. The annual cost per patient was $428, and the Asylum was sustained by the individual credit of the Board of Regents, who borrowed the necessary funds from the Bank of the State.

The crisis being passed, the "doors were again thrown open to patients from all parts, without discrimination or preference, without regard to form, degree or duration of disease, desiring the benefits of the Asylum to be commensurate with the wants of that class for whom it was designed." Citizens from other States were still received and restored to usefulness. In 1864, in consequence of a depreciated currency and of the exorbitant prices of supplies, the price of board in the city of Columbia was from $30 to $40 per day and from $3,000 to $4,000 per year. Facing such conditions, Dr. Parker courageously said: "In presenting my annual report I may reasonably offer you my congratulations that, notwithstanding the consequences of war in restricting and curtailing many

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comforts hitherto enjoyed by the inmates of the Asylum, as well as our remedial agents, we have by your personal liabilities, with the just liberality of the last Legislature, been successful in our efforts to conduct the institution through another year."



WAR PRISON CAMP ON ASYLUM PROPERTY IN 1864-'65.

During '64 an effort was made by Confederate officers to obtain the new Asylum building east of Pickens street as a prison for Northern officers. But the Regents declined to yield their trust for other than its original purpose, although they did grant an unoccupied square lying farther east for the purpose requested. A print from a war-time picture of the "Asylum Camp" is herewith reproduced.

A few paragraphs from the report of 1865 may serve to summarize the history of that eventful year:

"The year was commenced under most trying circumstances, but no special obstacle to our regular routine of duty occurred until the advent of General Sherman's army, on the 17th of February. The wholesale and wanton robbery and destruction permitted or ordered by that officer, the burning of the city and the subsequent want and suffering of the whole community, are too indelibly engraved upon your hearts to be now, if ever, forgotten. The Asylum, although it escaped pillage, was crowded by hundreds of our fellow-citizens, who sought safety and shelter from their burning homes. Its doors were thrown open and its scant supplies shared to the last mouthful with the starving and destitute. Left without a horse or wagon or any means of communicating with the outside world, our situation became every day more embarrassing, and early in April I made my first appeal to you. Your condition, in common with that of every other citizen, made it impossible for you to render assistance. My next appeal was to Governor Magrath, but alike without success. Soon followed the final disaster to our arms, and the utter worthlessness of Confederate currency. Placed in a position from which there seemed no way of escape, consistent with duty, I continued to struggle on until the last of May, when I was forced to apply to General Gillmore. He promptly ordered 'rations and medicines,' but such was the demand at this post that only one week's supply was received and I was again thrown on my own resources to support the institution. Feeling insufficient to the task, as soon as a Provisional Governor was appointed I wrote a full letter to him, but received no answer. Reduced to the last extremity, I appealed through the newspapers 'To the patrons of the Asylum and to the benevolent of the State.' This appeal, too, seems to have gone unheard, save in the single instance of a lady from Charleston, sister of James B. Campbell, Esq., who promptly responded by a donation of flour and bacon, nearly equal to the rations received by the Government. I have thus endeavored to sketch briefly some of the obstacles which beset my path."

In the same report the Regents say that they "deem it but simple justice to express their conviction that but for Dr. Parker's extraordinary skill and energy this shelter of the unfortunate must have succumbed to the pressure of the times. At a period when the resources of the Board were exhausted and the authorities to whom we applied for help were impotent to assist us, when destitution and starvation or the abandonment of the institution seemed inevitable, your Superintendent put his shoulders to the wheel and by appropriating his domestic supplies, exhausting his private resources and staking his personal credit, he contrived to secure food, raiment and the necessary comforts for the patients."

Such in part is the war record of the Asylum, and in it not only may the descendants of Dr. Parker take pride, but every South Carolinian should claim the honor of sharing in that feeling.

In 1869, in his report to the Regents, Dr. Parker says: "Another important subject for legislative action, now under the consideration of your Board, and which you will, doubtless, urge in your annual report, is the better provision for persons of color. More than twenty years ago, you obtained sanction of the Legislature to provide for and receive persons of color. Until the close of the war, very few applications were made, the number in the Asylum never exceeding five. During the present year, the number admitted was twenty-nine. For

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so large an accession to our number, there was no adequate and suitable provision, and the buildings now occupied and appropriated exclusive to them are almost full. These buildings, although comfortable, are of wood, and, in other respects, are ill-adapted to the purposes to which they are put. My experience leads to the conclusion that the welfare and proper treatment of the insane of both races requires that they be kept entirely separate and apart. And with this conviction, even if the present building were of greater capacity, I would still recommend that another and distinct house, of brick, properly planned and arranged, be erected, as soon as practicable, for their special accommodation."

In spite of recommendations to the same purport made annually by successive Boards of Regents and Superintendents, such a building as Dr. Parker saw the need of in 1869 was not erected till 1897. When it was begun, it was properly named for Dr. Parker as a slight recognition of his eminent services.

Dr. John Waring Parker (1803-1882) was born in old Edgefield District on January 24, 1803, being of English and French descent. He attended lectures in the Charleston Medical College and completed his medical education in Philadelphia. He practiced his profession in Spartanburg and Abbeville. In 1836



DR. J. F. ENSOR—1834-1907.

Dr. Parker was elected Superintendent of the Asylum. He was connected with the Asylum continuously for over forty-five years, except for a short interval during the Reconstruction period.

Dr. Parker, after serving as assistant physician during the administrations of both Dr. Ensor and Dr. Griffin, finally achieved the ambition of all good physicians, for he died in harness, as it were, after a short illness, October 11, 1882.

Under the Republican regime in 1870, Dr. J. F. Ensor, of Maryland, superseded Dr. Parker as Superintendent. Dr. Ensor began his administration by securing from the Legislature the adoption of "State Care" for beneficiary patients, that is, direct support from the State Treasury, instead of the uncertain support of each patient from his or her county, which had embarrassed the financial management of the institution for years. At one time when the State (Republican) Government refused to provide the means of maintaining the institution, and when its officers could no longer get credit for necessary supplies of food and clothing in Columbia or Charleston, Dr. Ensor obtained from benevolent Quakers in Philadelphia the sum of ten thousand dollars upon his personal note. In this way was the institution tided over a grave emergency. After the restora-

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tion of the State Government to the Democrats, Dr. Ensor's note was taken up by order of the General Assembly and paid from the State Treasury.

In view of the purchase, in 1896, of the Wallace property and the closing of adjacent streets and roads, it is interesting to read this paragraph from Dr. Ensor's last report for 1877-78:

"The plan I proposed is to extend Barnwell street from its present terminus through the Asylum lands till it strikes what is known as the Asylum Road from the east end of Elmwood avenue to where Barnwell street intersects it. Close up that portion of Pickens street that lies between the male and female departments and remove the high brick walls that now border it, and construct a neat iron or board fence between the two departments; purchase the entire Wallace estate that lies immediately in front of the female department, and as much of the adjoining land as may be deemed necessary; close up that portion of Elmwood avenue that lies between Bull and Pickens streets; and then, if you keep pace with the progress of the age in internal improvements and conveniences, you would have an Asylum that the State of South Carolina could look upon with pardonable pride."

This is enough to demonstrate how earnest an advocate Dr. Ensor proved himself in behalf of the insane entrusted to his care, and that like his predecessors he, too, dreamed dreams and planned far ahead of such financial backing as he was enabled to secure from the General Assemblies of his time.

An interesting view of the reconstruction period is well presented in Dr. Ensor's report for 1875-76, in which he epitomizes his service as Superintendent in these terms:

"It is my duty to inform you that it is not improbable that I shall sever my connection with the institution before the end of another year. The hardships and drawbacks attending its successful management are so onerous that I do not care to endure them any longer. I make no complaint of the duties that properly belong to the office of Superintendent. They are pleasant. They harmonize with my nature, my disposition, my taste and my education. But the burden I do complain of—the burden that is distasteful to me, and which I propose to endure no longer—is that of providing the ways and means for the support of the institution nine months out of every twelve, which I have had to do ever since I have been connected with it. The appropriations have been ample for the support of the Asylum, had they been promptly paid, but such has not been the case.

"Every year a very large part of the money due the institution has had to stand over till January of the next year. During the fiscal year of 1870-71 the institution received no money from the State Treasurer after July, the balance of the appropriation not being paid till the end of February, 1872. Scarcely any of the appropriation for 1872 was paid till the middle of January, 1873, there being due of this appropriation on the 31st of October, $67,170.24. The appropriation for 1873, after a deduction of $8,182.16 made by the State Treasurer on account of an overpayment on the appropriation of 1871, netted the Asylum but $57,788.56, of which $22,915.70 was not paid till the middle of January, 1874. That year we received no money from the State Treasurer after the 3d of June, till the following January. A large part of last year's appropriation was not paid till January of the present year. $18,000, or nearly one-third of this year's appropriation, is still unpaid, and will have to be carried over till another tax levy shall have been collected, which will not be before the middle of next winter. No part of any appropriation for any year has ever been collected before the first of March. Practically, therefore, the institution has been without money nine out of twelve months every year for the last five years. The difficulties and embarrassments attending the maintenance of a large establishment like this, without the necessary means to defray its expenses for three-fourths of every year, are incalculable. If the institution is kept open at all it must be done on credit, and credit is an expensive article, and often hard to procure at any price. After exhausting the credit of the institution, I have been obliged to use my own means and credit and the credit of my friends, for its maintenance or close its doors. Every year I have been compelled to beg and borrow, and to submit to all sorts of impositions and humiliations, to give my personal obligations and those of my friends, in order to keep the institution open. Even within the past two months of this year of reformation and good government I have been obliged to give my private notes in order to obtain the necessary subsistence and clothing for our inmates. I have been forced to do the same every year since I have been Superintendent, and it frequently happens that I am unable, for obvious reasons, to meet these obligations at maturity, which, while it interferes with my personal matters, is a serious injury to my credit. I do not ask any one to take my word for these statements. The records of this office and those of the various banks and mercantile houses in this city will verify them.

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"Moreover, the State authorities do not seem to give the institution that consideration to which it would appear to be entitled, nor to appreciate my efforts in behalf of its welfare."

Dr. Joshua Fulton Ensor (1834-1907) was born in Butler, Bath County, Maryland, December 12, 1834. His ancestors came to this country from Warwickshire, England. He received his early education in the common schools of Maryland and Pennsylvania. He was graduated in medicine from the University of Maryland in 1861. In the early part of the War between the States he entered the United States army as assistant surgeon, subsequently becoming surgeon. In 1868 he became medical purveyor for the Freedman's Bureau in South Carolina. In 1870 he was appointed Superintendent of the Asylum. After leaving the institution he held a number of positions of trust and honor under the General Government. Having been postmaster of Columbia for nearly ten years he died while still holding that position, August 9, 1907.

Dr. P. E. Griffin, of Darlington, succeeded Dr. Ensor in 1877. Dr. Griffin's administration was marked by many improvements which his predecessors had vainly endeavored to carry into effect. Responding to his earnest efforts and appeals, the Legislature, in the course of a few years, made appropriations for constructing the entire wing of ten wards now occupied by white women. In 1885 the large central structure for administration, domestic and amusement purposes was finished. The appeals for more land which for nearly forty years had been reiterated in vain in successive reports were finally heard when presented by Dr. Griffin and the Regents. Thus we find the Wigg Farm bought in 1877, the Parker Farm in 1878 and the Black Farm in 1881.

This sketch of Dr. Griffin was published in *The State* at the time of his death:

"Dr. Peter Evans Griffin (1830-1904) was born in Society Hill, Darlington County, August 30, 1830. His great-grandfather was Roderick McIver, the head of the Welch Colony that settled in the Pee Dee section of the State. Dr. Griffin was graduated from South Carolina College as an honor man in the famous class of 1852, numbering among his classmates Judge Hudson, General Youmans, Maj. Harry Hammond, Judge S. W. Melton and other men of note. After graduating in medicine in 1855 from the University of Pennsylvania and spending two years in practice at home, Dr. Griffin went abroad to spend two years more in study in the hospitals of Paris. Returning home, he continued in private practice until the War between the Sections broke out. In 1861 he enlisted as a private in Company F, Eighth Regiment, South Carolina Volunteer Troops. He was soon made second lieutenant of his company, being a gallant soldier. Shortly afterwards he was sent home on account of ill health.

"In the last year of the war he reëntered the service as surgeon of the Third Regiment of State Troops, the duties of which position he discharged with conspicuous ability until the close of the war. He was in the first battle of Bull Run and was in the fight at Williamsburg, Va., besides participating in many other fights and skirmishes.

"After the war, Dr. Griffin practiced at home until 1876, when he removed to Florence, practicing there until January 1, 1878, when he was elected Superintendent of the Lunatic Asylum. Dr. Griffin remained at the head of the institution for thirteen years, when he returned to private practice at Darlington, remaining there until the fall of 1898. He then returned to Columbia and entered upon the general practice of his profession. Three years later his health began to fail, and he suffered from a slight stroke of paralysis. Surrounded by the members of his devoted family, the end came peacefully, May 18, 1904."

In 1891, Dr. Griffin was succeeded by Dr. J. W. Babcock, of Chester.

In 1895, the Constitutional Convention directed the change of the old name of Lunatic Asylum to the more modern style of nomenclature of the State Hospital for the Insane. In 1896, the General Assembly authorized the purchase of the adjoining Wallace property, consisting of 110 acres, as well as the closing of adjoining streets and roads, and plans were at length carried into effect similar to those already advocated by Dr. Ensor in 1877. More recent additions in the rear of the institution have been the purchase of the Jones property (1902), the Seegers land (1903), and the Weir corner in 1904. By all these additions the total land of the institution has been brought up to about 360 acres. A commissary building was erected in 1895 and the Parker Building in 1897. A building for white men called the Taylor Building, having been under construction for some time, was burned in 1904, but has been restored. A two-story brick building called the Talley Building was erected in 1905 for excited white women, and a portion of another pavillion building for white women is now in process of erection north of the Main Building. The extension of Lumber street east to Harden street and the closing of Elmwood avenue and Barnwell streets completes the enclosure of the Hospital property, making a continuous boundary line

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on the south from the corner of Bull and Lumber streets to the Southern Railway.

THE COLORED INSANE.

During the first year of the life of the Asylum (1828-1829) applications were made for the admission of insane negroes. They were refused, however, as no special provision had been made for them by the General Assembly. This question, like Banquo's ghost, would not down, but kept forcing itself upon the Regents and the Legislature until finally an Act was passed in 1848 (almost one hundred years after the Provincial General Assembly had recognized the needs of negro lunatics), admitting insane slaves or free persons of color upon similar conditions as provided for white persons. Two small brick buildings were erected containing four rooms each for colored patients. In the next decade, thirty insane negroes were received. At the close of the war, five colored patients were under care. Since that time the problem of the negro insane has been one of constantly growing importance. As in other Southern asylums, their presence requires two additional departments, one for each sex. Some States, as Virginia and North Carolina, have entirely separate hospitals for their colored insane. Their rapidly growing number in this State has repeatedly brought up the question of a separate institution for them, but both the Regents and the General Assembly have decided that one single colony centrally located for both races was yet a better policy for South Carolina. The male negro patients are comfortably housed in a large three-storied structure, the Parker Building; the negro women are in the Old Asylum—the original structure begun in 1822.

METHODS OF SUPPORT.

From the opening of the institution two classes of patients were received—pay and pauper, or beneficiary, as the latter came more properly to be called at a later period. For a long while the prevailing idea of individualism as opposed to centralization prevailed even in the operations of the Asylum. That is, it was not expected that the State should do for individuals what the individual could or should do for himself. The State erected the buildings, but individuals or Commissioners of the Poor were called upon to support the patients. In fact, the Act of 1872 required that the rates be fixed by the Legislature so as to prevent any charge on the Treasury of the State. Originally, the rates for pauper patients were established at $156 per annum, but later they were reduced to $100 and no bond was required of the Commissioners of the Poor.

The rates for pay patients were from $250 to $650 annually, according to accommodations, payments being made half-yearly in advance and secured by a bond with approved security. When the accommodations became limited, the law required the admission of paupers in preference to pay patients.

In 1842, Dr. LaBorde showed that the expenses for pauper patients were $160 annually, or sixty dollars in excess of what the Commissioners of the Poor paid. Of sixty-five patients then in the Asylum, fifty-two were from South Carolina, and thirty-nine were paupers and twenty-six paying patients. "The Institution," says Dr. LaBorde, "is becoming a pauper institution, owing to the want of proper accommodations for the higher classes."

Any surplus accruing from pay patients was applied to the support of paupers. In 1848, when colored patients were first admitted, their rate was fixed at $100 per annum, paid by their owners. In 1853 there were ninety-five indigent patients and seventy-seven supported by their friends or estates.

In 1856, Dr. Parker states that "It should be remembered in connection with this part of the subject that our Asylum is not only a self-sustaining institution, but that for many years it has contributed largely to the support of pauper lunatics and is at this time paying at the rate of $6,500 per annum at least to this object." The rate for indigent patients continued to be fixed by the General Assembly and were paid by the Commissioners of the Poor for the several Parishes or Districts.

In 1858 the Legislature seemed to have yielded to repeated appeals and fixed the annual rate for pauper patients at $135, which was still found to be inadequate, as the actual annual cost was $165.

In his report for 1859, Dr. Parker informs the Regents that "unless these growing difficulties be promptly met and remedied, we must lose the character and position which we have so long and honorably maintained as an independent and self-supporting institution and become a burden and incubus upon the State. In the name of that liberal policy which established our early existence; of that wisdom and philanthropy which have always distinguished our statesmen; of

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that pride and patriotism which still animates our people; and of that courage from which none can claim continued exemption, I would reverently deprecate the issue." Of 247 patients then in the Asylum, 213 were from this State and 34 from other States.

The same system continued during the war, but the obligations of Commissioners of the Poor as well as of individuals not being promptly met, the institution suffered accordingly. Fluctuation in the price of food stuffs as well as in the purchasing power of Confederate currency added seriously to the difficulties of maintaining the institution.

Under date of October 8, 1862, Dr. Peter Bryce, formerly Assistant Physician in this Asylum, wrote to Dr. Parker on the methods of support an interesting letter from the Alabama Insane Asylum, of which he was then and for many years afterwards the distinguished Superintendent.

"The ways and means," says Dr. Bryce, "already in operation in our country for supporting institutions of this character are almost as numerous as the institutions themselves. In Virginia and Georgia the current expenses are met by appropriations made annually in advance by the Legislature, and in the former State alone, if I am not misinformed, more than $100,000 are granted every year for the benefit of the institution. In North Carolina and in your State the indigent insane are supported in the hospitals by the counties from which they are sent for a stipulated unconditional sum per capita, which sum is determined by the Legislature; and in some of the Western States I understand that a certain per cent. of the regular State tax is annually applied to the uses of the hospital. The objections to the system of annual appropriations adopted in Virginia and Georgia are, first, the difficulties of procuring from every Legislature a sum sufficient to meet the expenses of the institution, especially when the amount is likely to be large, and in the next place the impossibility of determining accurately what that amount is likely to be, in view of the ever-changing population of insane hospitals and variations in the prices of provisions and other necessaries of life. In addition to all this, the County Commissioners of the Poor, in consideration of the fact that the State alone provides for the insane without respect to the number from each county, commit every case possible to the Asylum without reference to the pathology or to the condition of the patient; upon the slightest evidence of mental unsoundness of whatever character or degree, the pauper is at once removed from the alms house, where in many cases he properly belongs, to the Asylum, and the burden of support placed upon the State. Under these circumstances the crowded state of the hospital too often excludes other patients who might be benefited by hospital treatment. During a late visit to one of these State hospitals I saw an entire family, six or seven in number, of idiots of the first degree, every one of whom should have been in the alms house. That those objections likewise obtain with greater force, perhaps, in those States where a certain portion of the State tax is applied to the hospital, you will readily infer. * * * But the fact is, the Legislature seldom or never allows a sufficient sum to the hospital for the support of the indigent insane, the effect of which is alike disastrous to the welfare of the patient and the character and vitality of the hospital. * * *

"How far these objections are met and effectually surmounted in (Alabama) you will readily discern from a glance at the accompanying document; you will perceive that the counties here are required to pay for the clothing and three-fourths of the expense of boarding their indigent insane in the hospital, while the remaining fourth, not exceeding a dollar a week for each patient, together with the salaries of the resident officers, are paid quarterly by the State. The price of boarding the indigent insane is determined by the Trustees at their regular meetings, and is never allowed to exceed the amount actually expended in their support. Observe now how this remedies the difficulties against which you have to contend. The county charges reduced to three-fourths of the actual expenses places them at as low a figure as they can be allowed in the poor house, or by private individuals, and a premium is actually offered to the county officers for the exercise of humanity. The remaining one-fourth paid by the State, together with the officers' salaries, constitutes comparatively a small item at the end of the fiscal year and is cheerfully given, but what is of paramount importance, is the support of that hospital at all times and under all circumstances is positively insured. * * *

"Hoping that you may succeed in establishing your Asylum upon the most liberal and enlightened foundation, I am very truly yours,

"P. BRYCE, Supt."

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The recommendations of Dr. Bryce evidently carried weight, for in the report of the Treasurer, Mr. John Waties, under date of November 4, 1865, it is stated: "The charges for pay patients have been reduced to original rates. The rate of paupers, as last fixed by the Legislature, was $312 per annum—the State paying one-fourth, the Districts three-fourths. At these rates the whole amount owing the Asylum is $32,555.45."

A year later, although the institution contained fewer patients than at the beginning of the war, the large amount of $17,219 was due from pay patients, which could not be collected, while the Commissioners of the Poor were equally remiss. Compliance with the law requiring payments in advance was the exception rather than the rule. Nine Districts had paid nothing for two years, only six had paid in advance and the rest were all in arrears. By 1868 the amount in arrears was over $26,000. In 1870, the Regents, acting upon Dr. Ensor's recommendation, urged the maintenance of beneficiaries by the State instead of by the several counties.

The method of requiring local Commissioners of the Poor to support from the Districts (counties) and Parishes their indigent insane had been in operation over forty years. The old ideas of individualism had to give way under the new order of affairs. The poverty of individuals and families as well as of communities forced all to look to the State for succor when misfortune came upon them. The law of State care for pauper patients was passed, but under Reconstruction it proved a failure, since the State Treasurer was often unable to meet the amounts called for by warrants upon him authorized by the Legislature. But the idea of centralization had been engrafted in the place of the old individualism, and State care has continued in spite of all its abuses and drawbacks unto this day. A few years ago this system was adopted by New York State as the only right method.

There is still a small residue of paying patients, yielding to the institution about $5,000 annually. These are supported from small personal estates or from the pride of relatives. As these patients receive no advantages over beneficiaries, it is a fair question whether the State should not make the institution one of absolute charity. It will probably be only a short time before this is done.

To all this there is one exception, viz.: The support of patients suffering from inebriety and the drug habits. These the law requires not only to be pay patients, but that they be accompanied by two months' pay ($41.70) as a prerequisite for admission, and, furthermore, a bond is required securing future payments. It is painful to say that this law is honored more in the breach than in the observance. The old customs of the County Commissioners of the Poor have been handed down to this generation, for county officers wilfully disregard the law when sending inebriates to the Hospital and ignore bills subsequently sent them.

The expenses of the institution in 1870 were $58,507.52, the total number of patients being 370. A year later the approximate expense per patient was $250.

Since that time the financial side of the institution is indicated by a table showing expenses at the close of every fifth year:

Year.	Total Patients.	Daily Number.	Total Expenses.	Per Capita.
1875	428	312	$ 83,182	$210.40
1880	541	397	84,000	214.04
1885	914	593	136,977	146.34
1890	1,014	754	100,744	131.05
1895	1,157	827	123,332	115.76
1900	1,461	1,043	127,181	102.71
1905	1,734	1,250	176,708	103.04

THE DIX FUND.

The institution never had an endowment. In the '70's, Miss Dorothea L. Dix. the lifelong friend of the insane in this and other States and countries, collected by private subscription in Charleston and elsewhere $3,300. This sum was invested in 4 per cent. bonds of the City of Charleston, which were placed in the hands of a Trustee, with instructions that the income be spent under the direction of Dr. Parker for the pleasure and comfort of the patients. After several years, upon the death of the distinguished Trustee, the bonds disappeared and were only recovered in 1894 through the efforts of the late Mr. A. H. Hayden, of Charleston, a former Regent, and of Mayor J. F. Ficken and Corporation Counsel Charles Inglesby. This fund served under authority of the General Assembly to make part of the first payment on the Wallace purchase, and, next

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to the approval given the proposed purchase by Governor Evans, was one of the most important aids in securing that valuable property. In recognition of the aid thus rendered the institution by Miss Dix even after her death, the largest building on the Wallace land was devoted to convalescent white women and has very largely added to their "pleasure and comfort." This building is appropriately called the Dix Cottage.

GROWTH OF POPULATION.

At the end of the second year of the history of the Asylum, eighteen patients had been received, only two being recent cases.

In 1836, when Dr. Trezevant took charge, there were fifty-three inmates and in the next seven years one hundred and fifty-three patients were admitted.

The increase in the number of patients has necessarily been brought out under the several preceding headings and need not be repeated. In a recent report of the Hospital it is stated that the total number of admissions since its opening were 10,568, of whom 7,150 were received since 1880 and 4,861 since 1890. The annual admissions have steadily and latterly enormously increased from fifty-four in 1850 to five hundred and seventy-one in 1906. In other words, the Hospital now receives over one thousand patients every two years, whereas it formerly required thirty years to bring that number of patients from South Carolina and the adjoining States.

Without entering into an extended discussion of the question, "Is Insanity Increasing?" it may be said that while there may be a slight increase, it is far short of such an increase as appears at first sight to be indicated by these figures.

The real test of actual increase is shown by the number of first attacks occurring in the general population. For instance, there were admitted in 1881, one hundred and forty cases said to be suffering from the first attack of mental disease; in 1885, one hundred and ten cases; in 1890, two hundred and twenty-nine; in 1895, one hundred and ninety-nine; in 1900, two hundred and sixty-five; in 1906, three hundred and two. Considering the growth of population, this is not a large increase of occurring cases of insanity.

It cannot be denied, however, that there has been an increase in insanity among the negroes since their emancipation. In 1850 and 1860, insanity was about one-fifth as common in the negro as is in the white race; in 1870 and 1880, it was one-third as common, and in the late years about one-half as common. There is no reason why in time insanity will not be equally as common in the black race as in the white.

In our State since the adoption of "State Care," there has undoubtedly been a growing tendency to unload upon the State burdens which in former times would have been borne by individuals or localities. Dr. Bryce recognized in his letter in 1863 that this was a tendency of that time, but subsequent results must have far outstripped his expectations.

There is, furthermore, today a broader view as to what constitutes insanity. Formerly, an asylum population consisted largely in raving maniacs. Now the large majority are quiet and well-behaved. While asylums may never be popular, there is no doubt that they are much more resorted to than formerly. Public asylums, at any rate, have today no need to advertise.

All old institutions show an increasing number of old and broken down cases, inebriates and cases of simple senility.

THE FUTURE.

From what has been set forth it must be clear, as was said in a recent report of the Regents, that the problem of caring for the insane of our State has grown more complex. From time to time efforts have been made to secure legislative aid in separating some of the classes—the negroes or the idiots and epileptics, for instance—into an institution by themselves. But there has been no separation of the classes originally assigned to the Asylum. On the contrary, to the "idiots, lunatics and epileptics" have been added inebriates, criminals, cases of old age, nervous diseases, etc.

Out of this study of the history of the Hospital, covering a period of over eighty years, what are some of the lessons of the past and needs of the future?

First.—That it has become the policy of the State to maintain in Columbia a large central colony for the insane of both races.

Second.—That "State Care" is a better system than was afforded by the old method of county support.

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Third.—That the separate or cottage plan of buildings or wards is better suited in our climate to the needs of the insane than are large, conglomerate buildings.

Fourth.—That the separation from the insane (properly speaking) of such classes as the inebriates, idiots, epileptics, etc., who are now associated with them, would prove advantageous to all.

Fifth.—That the improvement of the county alms houses by having hospital wards, etc., would relieve this institution from receiving so many helpless dotards.

Sixth.—The establishment of a farm colony for epileptics, a school for the feeble-minded and a hospital for inebriates, should form part of the future policy of the State.

Seventh.—That the erection of separate wards for the violent insane is desirable.

Eighth.—That the establishment of a farm colony for the chronic insane is an important problem for future consideration.

Ninth.—The means for separating the tuberculous from the non-tuberculous is at the present time a question of vital importance.

Finally, it may be confessed that one of the purposes of this long. though imperfect, review of an important subject has been to demonstrate that there has been present here in South Carolina for over two hundred years a well-defined idea as to the needs of public charity properly bestowed. Once kindled, that idea has never been extinguished. It has had its advocates from generation unto generation. It has not been abolished by legislative indifference, by the ingratitude of its beneficiaries, nor by war itself.



SAMUEL FARROW,
1760-1824, Founder.
Father of the Asylum.



WM. CRAFTS, JR.,
1787-1826,
Co-Founder.



DR. PARKER,
1803-1882,
Resident Physician,
First Superintendent.



DR. PETER E. GRIFFIN,
1830-1904.
Superintendent.

It is nearly a century since Samuel Farrow conceived the idea of an asylum in that sanely determined mind of his. For years he failed to secure attention, till Crafts came to his aid. Then, at length, the General Assembly of 1821 (be it remembered with honor!) in advance of its time listened and said: "Let there be an asylum." Forthwith it was begun by the eminent architect, Mills, but ere it was completed, Farrow, the originator, and Crafts, his coadjutor, had each gone to his reward. Then Davis, the pioneer, directed the young institution through a most hazardous and discouraging experimental stage, when even the Regents themselves were disheartened. Trezevant followed, sagacious and intrepid, who raised his prophetic voice against a city location in vain for thirty years. For over forty-five years Parker steadfastly kept the faith and remained supremely active at his post, even amidst the ravages of war and the humiliations of Reconstruction. With devotion to his charge, and in order that his patients might have bread, Ensor pledged his own means to distant strangers when his adopted State had no credit at home or abroad. And, in turn, Griffin took up the burden and by his efforts laid the broader foundations for the Hospital his predecessors had striven for in vain through two generations. Besides these, from the beginning, Boards of Regents—men of fair renown, selected for their wisdom and foresight—have battled right manfully for the claims of the insane before Governors and honorable Committees of the General Assembly and results have slowly followed.

But through it all does there not run in our minds a reasonable doubt whether the State—that is, the people; farmers, business men, doctors, lawyers, ministers, legislators, Governors, Christian men and women, if you please—whether these have ever given the most worthy public charity in their midst the full measure

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of its deserts? Would not more prompt response to some of the repeated appeals in the past—the abolition of wooden buildings for patients, for instance—have betokened a more generous and active charity? Have not important problems connected with the development of the Asylum received less consideration than they merited? Have county officials always protected the institution with the same fidelity that they have given to local interests?

As we look back and learn what the old Province and State accomplished for the unfortunate, we proudly exclaim, "Well done!" But, at times, could she not have responded more promptly and generously, when promptitude and generosity meant so much? These are some of the queries each of us may answer for himself.

Today a hopeful expectation may be entertained that henceforth the State—that is, the people—will at all times supply all the means required to make the State Hospital for the Insane what it ought to be. With the lessons of the past as well as the intimation of a wonderful future before us, none may assume the role of prophet. From recent observations, however, the outlook is encouraging, but we must not forget that much yet remains to be done.

APPENDIX*

NUMERICAL AND FINANCIAL TABLE.

	Total Patients.	Disbursements.		Total Patients.	Disbursements.
1821	...	$ 30,000.00	1854	...	.....
1822-27	...	70,000.00	1855	236	34,018.84
1835-1855	757	.....	1856	238	38,037.00
1837	66	10,712.21	1857	256	38,894.47
1838	...	9,481.49	1858	234	39,600.00
1839	...	9,639.15	1859	250	45,087.26
1840	...	9,444.58	1860	263	49,619.58
1841	...	9,948.49	1861	256	43,688.79
1842	...	.....	1862	240	41,314.62
1843	...	.....	1863	243	85,488.19
1844	...	.....	1864	216	158,240.94
1845	95	11,654.89	1865	174	207,487.72
1846	...	.....	1866	174	47,181.00
1847	103	11,728.62	1867	...	.....
1848	108	12,702.56	1868	269	57,758.63
1849	140	25,359.57	1869	298	48,399.56
1850	162	25,757.78	1870	322	58,507.00
1851	176	23,702.00	1871	370	65,096.00
1852	...	.....	1872	388	66,506.00
1853	210	27,094.00	1873	388	87,751.00

*Owing to loss of records—the Hospital has not a complete file of its reports even—it would be difficult, if not impossible, to supply complete tables of numerical and financial statistics. The appended tables are the result of researches in such records as are available at this time. It should be kept in mind that the State made appropriations for buildings alone till 1870, the patients being supported by their families or friends ("pay patients") or by the District or County Commissioners of the Poor ("pauper" or "beneficiary patients"). As already stated, South Carolina embarked on the method of "State care" in 1870. Since that time the Legislature has assumed entire financial responsibility for the Hospital.

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	Total Patients.	Average.	Per Capita.	Disbursements.
1874	428	312	$210.40	$ 83,182.00
1875	447	304	202.83	70,285.00
1877	441	298	194.21	89,126.00
1878	457	317	189.02	61,888.00
1879	493	339	176.25	69,640.00
1880	541	397	214.04	84,000.00
1881	643	.....	153.24	117,589.00
1882	755	.....	141.94	112,909.00
1883	789	564	146.54	76,836.00
1884	914	630	142.78	102,638.00
1885	859	653	146.34	136,977.00
1886	854	623	140.27	114,661.00
1887	894	653	137.39	95,372.00
1888	931	657	140.59	94,142.00
1889	1,014	714	137.47	94,265.00
1890	1,081	754	131.05	100,744.00
1891	1,132	754	133.42	113,342.00
1892	1,105	754	132.11	113,542.00
1893	1,109	765	132.80	105,476.00
1894	1,107	778	123.37	112,383.00
1895	1,157	827	116.76	113,232.00
1896	1,247	853	107.80	157,100.00
1897	1,257	875	112.31	122,273.00
1898	1,383	976	102.52	124,494.00
1899	1,399	996	102.75	113,352.00
1900	1,461	1,043	102.71	127,181.00
1901	1,453	1,068	103.00	135,316.00
1902	1,611	1,134	101.32	157,870.98
1903	1,641	1,155	105.06	153,237.91
1904	1,736	1,210	102.39	162,643.36
1905	1,734	1,250	103.04	128,795.58
1906	1,849	1,317	106.89	164,701.14

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RESIDENCES OF PATIENTS ADMITTED DURING 1906—NUMBER OF PATIENTS DECEMBER 31, 1906.

COUNTIES.	Males.		Females.			Males.		Females.		
	White.	Colored.	White.	Colored.	Total.	White.	Colored.	White.	Colored.	Total.
Abbeville	4	1	3	3	11	8	3	10	5	26
Aiken	5	6	4	2	17	11	12	6	9	38
Anderson	6	7	1	2	16	16	13	22	7	58
Bamberg	....	1	3	2	6	1	2	2	1	6
Barnwell	4	7	3	1	15	9	13	8	7	37
Beaufort	2	2	1	4	9	4	6	3	9	22
Berkeley	....	3	1	3	7	....	5	2	5	12
Charleston	4	7	11	15	37	26	17	43	34	120
Cherokee	1	....	3	1	5	4	2	3	1	10
Chester	1	4	2	7	14	5	3	9	9	26
Chesterfield	5	....	1	1	7	9	1	9	1	20
Clarendon	1	3	1	1	6	10	4	11	6	31
Colleton	2	4	3	1	10	7	9	13	3	32
Darlington	3	3	4	5	15	5	7	10	8	30
Dorchester	....	1	1	4	6	2	3	....	4	9
Edgefield	1	....	2	4	7	8	3	10	4	20
Fairfield	....	4	1	3	8	4	4	3	6	17
Florence	4	5	2	1	12	5	8	5	2	20
Georgetown	2	2	2	3	9	3	4	1	2	10
Greenville	13	6	10	7	36	23	9	38	11	81
Greenwood	5	7	4	3	19	4	11	4	5	24
Hampton	1	3	3	3	10	1	6	8	7	22
Horry	2	1	1	1	5	4	3	16	3	26
Kershaw	3	1	2	1	7	4	4	6	2	16
Lancaster	2	1	2	1	6	4	5	10	2	21
Laurens	6	5	4	2	17	11	13	17	4	45
Lee	2	5	1	2	10	2	3	1	4	10
Lexington	7	1	4	3	15	10	1	14	7	32
Marion	2	3	5	3	14	7	6	16	8	37
Marlboro	1	2	4	3	10	3	8	16	3	30
Newberry	1	4	2	4	11	....	9	10	7	26
Oconee	2	1	7	2	12	8	3	17	4	32
Orangeburg	2	6	3	6	17	7	10	12	13	42
Pickens	5	3	4	....	12	9	5	11	....	25
Richland	15	13	13	10	51	15	28	19	25	87
Saluda	3	1	2	....	6	4	1	6	1	12
Spartanburg	12	9	8	4	33	24	18	30	11	83
Sumter	4	9	1	6	20	6	10	12	8	36
Union	3	1	6	4	14	6	5	16	5	32
Williamsburg	5	3	2	....	10	6	4	4	2	16
York	6	4	4	5	19	12	12	10	11	45
Total	148	149	141	133	571	307	293	463	266	1,329

PUBLIC CHARITIES IN COUNTIES

In the Constitutional Convention of 1895 the effort was made to place the county poor-houses, jails, etc., under the supervision of a State officer, but the measure failed on the third reading. To complete this article these extracts are taken from the report of the Bureau of the Census on "Paupers in Almshouses, 1904":

"*South Carolina.*—The county commissioners are overseers of the poor, except that in the cities of Charleston and Columbia the city authorities must provide

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for the poor of those places. Legal settlement, obliging the county to furnish support, is gained, in general, by residence in a county for three years. Provision is made for the support of poor persons having lawful settlements in other places, for their removal thither, and for the recovery of the expenses incurred by the place giving relief. The overseers of each city and county must make annual returns to the Secretary of State with full details as to number, sex, color, etc., of the paupers helped, the mode of support, cost of the same, etc. Children who are county charges or likely to become such may be apprenticed to some reputable person—if males, until 16 years of age; if females, until 14 years old.

"The county commissioners have charge of the poor-house, appoint its superintendent, physician, etc. The poor-house must have sufficient tillable land to give employment to all paupers who are able to work. The commissioners must submit an annual report containing an itemized statement of expenses and an account of the condition of the poor-house and of its inmates to the presiding Judge of the Court of General Sessions, which report is turned over by him to the grand jury."

In 1903 there were 686 paupers, or 487 persons per 100,000 of population, in the alms-houses of South Carolina, against 578 in 1890, with a corresponding percentage of 50.2, the decrease being 1.5 per cent. In the same year the rank of this State by ratio of paupers enumerated in alms-houses to population was thirty-fifth in the United States. In 1890 it was twenty-eighth. Of the total number given, 418 were white, of which only 155 were male; and 268 were negroes, of which 154 were male. Practically all the paupers in South Carolina were of native birth except in the county of Charleston; there 11 foreign-born persons were receiving public charity. In the entire State only nine other foreign-born persons were in alms-houses, and they were confined to counties in which cities were located.

The following statement shows the number of paupers by races in the alms-houses of the State on January 1, 1905—Lee County having none and being omitted:

	White.	Col'd.		White.	Col'd.
Abbeville	10	24	Lancaster	5	5
Aiken	23	8	Laurens	7	7
Anderson	25	18	Lexington	1	6
Barnwell	14	3	Marion	9	4
Beaufort	...	8	Marlboro	10	5
Charleston	63	...	Newberry	6	14
Cherokee	8	6	Oconee	19	32
Chester	14	14	Orangeburg	9	32
Chesterfield	5	1	Pickens	16	1
Colleton	9	...	Richland	13	21
Darlington	5	4	Saluda	4	4
Edgefield	12	12	Spartanburg	24	14
Fairfield	88	21	Sumter	16	11
Florence	55	6	Union	18	3
Greenville	27	17	York	18	10
Greenwood	...	9			
Hampton	14	...	Total	415	289
Kershaw	8	1			

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"THE KIRKWOOD."
TOURIST HOTEL AT CAMDEN.

CHAPTER IV.

CLIMATOLOGY.

Few, if any, States afford so interesting a field of study in physiography as South Carolina. The topography varies from marshy coastal lowlands, interior alluvial plains and swamps, sandy highlands, rolling uplands to low mountains, in a series of gradations from the Atlantic Ocean to the southern spurs of the Appalachians. The shape is that of an isosceles triangle having its base resting on the ocean and its apex touching the mountains. This triangle is inclosed by the lines formed by the parallels of latitude, 32 degrees and 35 degrees 12 minutes north, and longitude 78 degrees 30 minutes, and 83 degrees 20 minutes west of Greenwich. The State is bounded on the north by North Carolina, on the east by North Carolina and the Atlantic Ocean, on the south by the Atlantic Ocean and Georgia, and on the west by Georgia. Her greatest dimension is a line from Georgetown running northwestward through Columbia to the northwestern part of Greenville County, and measures 241 miles. The longest straight line due north and south is 216 miles, and can be drawn from the southernmost point of Beaufort County to the North Carolina border in York County. The total area is 30,170 square miles, bearing a population in 1900 of 1,340,000, making the density of population approximately forty-four per square mile. The area expressed in acres is 19,308,800, of which 13,958,014 acres were included in farms, and of these farm lands 5,775,741 acres were under tillage in 1899, yielding crops valued at $58,890,413, or about $11 per acre.*

The entire State is well watered by numerous rivers and their branching tributaries. The principal rivers are navigable from the ocean for varying distances, usually to the points where the lowlands end and the hill country begins. Although the commerce carried by water is as yet comparatively unimportant, it is capable of being greatly increased. The "up-country" rivers and their largest tributaries are important and valuable for the numerous water-power sites they offer. The relation between these streams in their availability for furnishing cheap power for manufacturing purposes, and the seasonal and annual precipitation, is intimate, but has been modified, and the availability of the water-power physical features of the western half of the State. When cleared, these hillsides yield profitable crops for a few years only, then become gullied, almost barren sites decreased by the deforestation of the steep hillsides that are so important wastes, denuded of their soil by the washing rains. These gullies act as troughs and drainage channels and facilitate the rapid off-flow of the rainfall, so that the streams are subject to quick freshets and overflows that destroy bottom-land crops, or damage them, then as quickly fall again to minimum flows. This rapid off-flow of the otherwise sufficient rainfall renders power sites on the smaller streams unavailable. The remedy is reforestation of the hillsides, for which the small loss in tillable lands incurred would be amply compensated by the greater and more certain yields of the bottom lands that are the depositaries of the soil from the denuded hillsides. At present the frequent occurrence, and some seasons recurrence, of freshets, renders crops precarious on many of the widest and most fertile valleys.

Reforestation would tend to conserve the rainfall and make the flow of the rivers more even and at a greater average depth.

The physical features of South Carolina have been so accurately defined and described in a publication issued by the State in 1883† that all subsequent geographers have copied from it, almost in the exact language of the original description, and the regions as named in that publication will be briefly described for a correct understanding of the difference in climate of the eastern and western parts of the State.

There are seven well-defined regions, named in the order that they occur from the coast to the mountains.

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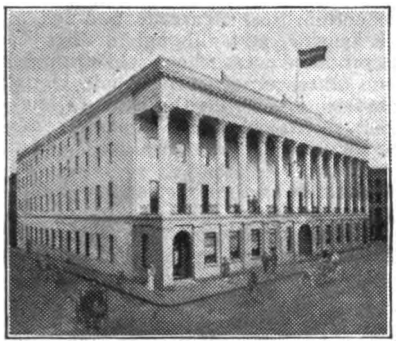
*Special Bulletin, Twelfth Census of the United States. See other chapters for later figures.

†South Carolina—Resources and Population—Institutions and Industries.

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I. "The Coast Region," a narrow border fringing the coast and extending inland about ten miles. It includes the numerous sea islands and the extensive salt marshes. The climate of this region is illustrated by the data for Charleston and Beaufort, the latter representing the sea islands.

II. "The Lower Pine Belt or Savannah Region," lying inland and parallel with the coast region. This region has an average width of about fifty miles, and an average elevation of about 150 feet. It includes the tidal estuaries of the rivers, and considerable country lying above tidal influence. In this region there are extensive swamps and undrained lowlands. The land is generally flat, with a few elevations rising to a maximum height of 250 feet. The average slope is two and one-half feet to the mile. This makes drainage difficult and detracts from the otherwise exceedingly fertile soil, although along its western border lie the regions of greatest productiveness of the entire State. The climate of this region is shown by the data for Charleston, Blackville and Trial.



CHARLESTON HOTEL.

III. "The Upper Pine Belt" lies still further inland, between the lower pine belt and the sand and red hills, and has an elevation ranging from 130 to 250 feet. Its surface is comparatively level but rolling, and it has good drainage, with an average slope of about five feet to the mile. This region has the distinction of including the best and most productive farm lands in the State, but its soil decreases in richness as the region merges into that of the red hill and sand hill regions. The climate of this region differs but little from that of the lower pine belt, except that the proximity of the ocean is less apparent, and is shown by the data for Blackville and Society Hill.

IV. "The Red Hill Region" is irregular in outline and consists of a series of detached groups of hills on the northwestern border of the upper pine belt, and among the sand hills. Its most northerly group is the "High Hills of Santee," in Sumter County. The red hills attain their highest elevation in Orangeburg County, with crests of from 500 to 600 feet above the sea. The soil is a reddish loam that responds to fertilization, but in its natural state is not productive and it requires skilful tillage. The climate is represented by the data for Stateburg.

V. "The Sand Hill Region" stretches across the State from the Savannah River, opposite Augusta, Georgia, to the North Carolina line, where it intersects the Great Pedee River, and includes the whole or parts of Aiken, Edgefield, Lexington, Richland, Kershaw, Lancaster, and Chesterfield Counties. Its greatest width is about fifty miles, in Lexington County. The sand hills attain an elevation of about 600 feet in Aiken County, and a maximum elevation of from 700 to 800 feet in Lexington County. The streams that originate in the western parts of the State have in this region an abrupt descent into the "low-country," and afford numerous water-power sites, as in many places the descent is steep enough to form low falls and rapids. The soil of the sand hills is loose, rounded, sand, and is of low fertility, except that the river bottoms are usually fertile, their soil being of a different texture and formation, being formed by the depositions of freshets and overflows of the muddy streams that carry the soil from the denuded hillsides of the "up-country" and leave it in successive layers in the middle and "low-country" valleys. The sand hills are noted for their large commercial peach orchards, especially in the more southerly portions, but the soil and climate are so alike over the whole region that fruits of all kinds would attain the same early perfection, even to the North Carolina border. This region is justly famed for its salubrious winter climate, and contains widely known health and pleasure resorts, those best known being the Aiken and Camden, although the entire region shares in the climatic advantages of any part. The forests originally



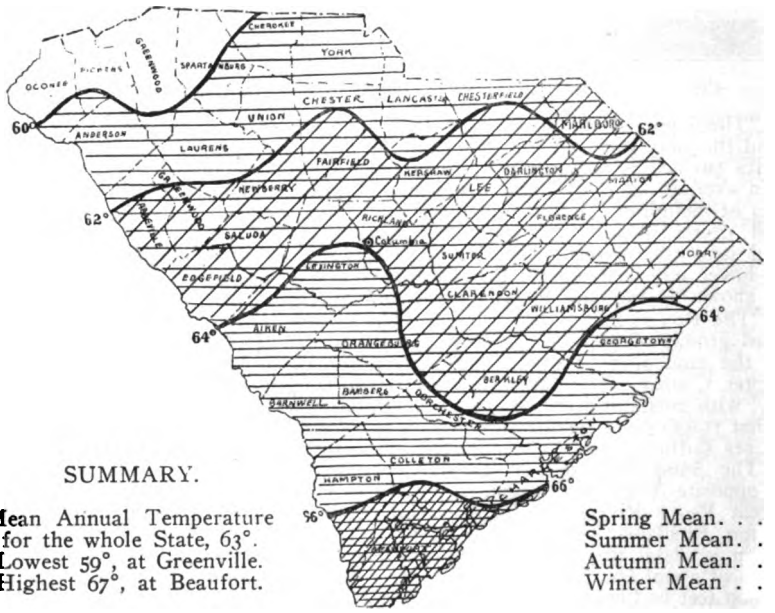
HOBKIRK INN, CAMDEN.

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consisted of long-leaf pine, but being nearly all cut for timber, it has been succeeded by the short-leaf pine, and scrub oak. The climate of this region can be studied from the data for Aiken, Columbia, and Society Hill.

VI. "The Piedmont Region" includes the whole of ten and parts of eight western counties, and is the largest region in the State. The elevation ranges from about 350 to 1,000 feet. This region has a diversified soil, practically all capable of tillage, with an evenly distributed population. The cereals, grasses, and fruits of the Northern States, as well as cotton, rice, sugarcane, and figs, all indigenous to the South, here flourish side by side, and although neither the former nor the latter attain their maximum productiveness, they yield profitable returns under proper cultivation. Perhaps no other region in the whole United States can compare in variety of crops commonly raised with this region, unless it be in the northern portion of Georgia and Alabama, where the climatic conditions are similar. The climate of the Piedmont region is shown by the data for Trenton, Columbia, Santuck, and Greenville.

VII. "The Alpine Region" comprises the foothills of the Appalachian Mountains, and occupies the northwestern border of the State. The country is hilly and broken, with occasionally small level tablelands capable of cultivation. The entire region would afford good pasturage for sheep and goats. Its elevation



CLIMATOLOGICAL MAP.

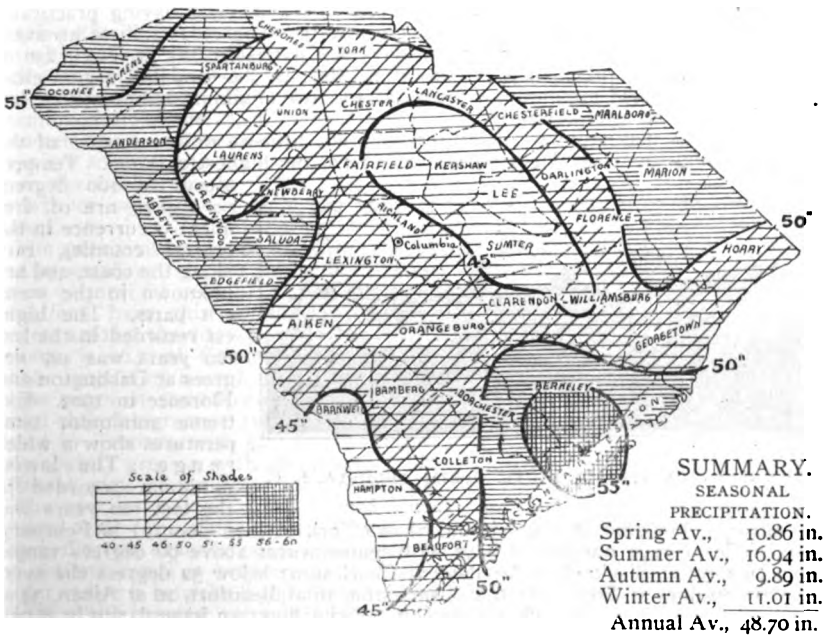
ranges from 1,000 to 3,436 feet, the latter being the summit of Mount Pinnacle, in Pickens County, and is the highest point in South Carolina. Agriculturally, this region is of slight importance, but it contains unexploited mineral wealth of probably great value, and it is heavily forested with hardwood trees. It has a distinctively mountain climate, modified by its southerly latitude and comparatively low elevation. There is no data available to define its climate except that for Greenville on its southern border.

The above named physical regions have well-defined and definitely ascertained boundaries, and each has its peculiar climatic features, but it must not be inferred that the climatic and physical boundaries coincide, or that the former bears an unvarying relation to the latter throughout the year, or in any one season. There are times when the climatic boundaries disappear, especially during severe winter storms, and at times they present a reversal, more particularly in the summer time. In general, the coast and adjacent regions have the more equable temperatures, the western portions the widest range. The difference between the annual mean temperature of Beaufort (the warmest place) and Greenville (the coldest) is 8 degrees. The spring and autumn seasons maintain this difference, while in summer it is only 6 degrees, and in winter it rises to 11 degrees. If an intermediate station is included in the comparison, Columbia, for instance, midway

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between Beaufort and Greenville, it is found that Columbia's mean annual temperature (64 degrees) is 2 degrees lower than that of Beaufort, and 6 degrees higher than for Greenville; in spring the differences are 3 degrees and 5 degrees; in summer, 1 degree and 5 degrees; in autumn, 4 degrees and 4 degrees; and in winter, 4 degrees and 7 degrees. In other words, the whole of the eastern part of the State, or the so-called "low-country," has the more equable temperature. The same relative differences appear when more stations are included in the comparison.

If, instead of the mean annual and mean seasonal temperatures, the mean maximum temperatures are used in comparison, a much smaller difference is found to exist, Beaufort's annual mean maximum being 75 degrees, Columbia 74 degrees, and Greenville 70 degrees. The seasonal mean maximum temperatures are, in the same order, for the spring, 75 degrees, 74 dgrees, 70 degrees; for the summer, 89 degrees, 90 degrees, 85 degrees; for the autumn, 77 degrees, 74 degrees, 73 degrees; and for the winter, 59 degrees, 57 degrees, 52 degrees. While this comparison corresponds closely with the annual and seasonal means, it also shows that the central parts have higher day temperatures in the summer than either the coast or the highlands. The difference is slight between the center and the coast (one degree) and very material between the center and west portion (5 degrees).



SUMMARY.
SEASONAL PRECIPITATION.

Spring Av.,	10.86 in.
Summer Av.,	16.94 in.
Autumn Av.,	9.89 in.
Winter Av.,	11.01 in.
Annual Av.,	48.70 in.

PRECIPITATION MAP.

The mean minimum temperatures, both annual and seasonal, show less variability, as well as wider ranges. The annual mean minimum for Beaufort is 59 degrees, for Columbia 53 degrees, and for Greenville 47 degrees. The seasonal values, in the same sequence, are, for the spring, 58 degrees, 52 degrees, 46 degrees; for the summer, 74 degrees, 70 degrees, 65 degrees; for the autumn, 61 degrees, 54 degrees, 48 degrees; and for the winter, 42 degrees, 37 degrees, 28 degrees. This comparison is interesting, as it shows that on the coast the minimum averages at about the lowest temperature (during the winter) at which vegetation will grow; in the central parts it is too low for growth, although well above freezing, while in the west the average minimum is 4 degrees below freezing. At Santuck, in the eastern part of the Piedmont region, the winter mean minimum is 31 degrees; at Clemson College it is 30 degrees; at Aiken, 39 degrees; at Society Hill, 36 degrees; Trenton, 38 degrees; Trial, 37 degrees. The low minimum at Trial cannot be explained by reference to its location, about fifty miles from the coast, but the reason undoubtedly is on account of the level, low, swampy surrounding country. The annual mean maximum is 74 degrees at

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Trial, the same as at Columbia, but the annual mean mimium is 1 degree lower. The greatest differences in temperature between the extremities of the State are along a northwesterly and southeasterly line, rather than along a north and south line, although the distances are practically the same, showing the influence of the high elevations in the northwestern portion.

Killing frosts are infrequent on the coast, although few, if any, years have been exempt. The average date of last killing frost of spring at Charleston is March 3d; at Beaufort, farther south, but in a more exposed and open locality, it is March 8th. The latest dates of killing frost in spring at those points are April 2d and 1st respectively. Inland and westward, the average dates of last killing frost advance regularly, with one exception, to April 7th at Santuck and 5th at Greenville. At Trial the date is as late as April 4th, and again illustrates the susceptibility of this locality to low temperatures. In passing, it should be noted that every section that has sandy soil exhibits the same susceptibility, especially where the sand is light yellow or nearly white. In the autumn the dates of first killing frost show the same march, except in an opposite direction, and with the same inconsistency at Trial as in the spring, being earliest at Santuck (September 30th), then at Trial (October 10th), followed by Greenville (October 15th), and from then on regularly to the coast, on November 9th at Charleston and 7th at Beaufort. The average dates of first killing frost follow the same chronology as the earliest dates, ranging from October 29th, at Santuck, to November 30th, at Charleston, with Greenville and Trial having practically the same dates, November 5th and 6th respectively. These dates show an average season without killing frost of 272 days at Charleston, 215 at Trial, 230 at Columbia, 205 at Santuck, and 215 at Greenville. In the sand hill region clear nights, in spring and autumn, are favorable for low minimum temperatures, but generally without frost formation.

The extreme maximum temperatures vary but little in different parts of the State, although the central portions usually have the highest maxima. Temperatures of 100 degrees or higher are of frequent occurrence in the central counties, rare along the coast, and are unknown in the western parts. The highest recorded in the last ten years was 107 degrees at Darlington and Florence in 1902. Extreme minimum temperatures show a wider range. The lowest minimum recorded in the last ten years was 11 degrees below zero at Santuck and Shaws Fork (Aiken County) in February, 1899. The average number of days with temperatures above 90 degrees ranges from 79 days at Blackville to 21 days at Charleston; below 32 degrees the averages are 80 days at Greenville, 9 at Charleston, 16 at Beaufort, 20 at Aiken, 34 at Trial, 28 at Stateburg, and 38 at Columbia. This shows an irregularity in distribution that may be attributed to local topography, soil, and elevation.



THE HAMPTON TERRACE HOTEL, NORTH AUGUSTA, S. C.

The average relative humidity at different places is largely a matter of approximation, as observations have been taken for any considerable period at two places only, namely, Charleston and Aiken, and as the hours of observation were not the same, the results are not strictly comparable. These observations are not taken at voluntary observer's stations, and at Columbia cover not quite three years, a period too short for reliable means. These three years compare favorably with the longer period at Charleston. To institute a reliable comparison between Charleston and Columbia, the data for 1901-02-03 were reduced to means, and are given in the following table for January and July. The relative humidity data for Aiken at 7 A. M. and 9 P. M. is added to the table, and includes a period of twelve years.

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JANUARY.

Places.	8 A. M. Tempt. degrees.	8 A. M. R. H. per cent.	8 P. M. Tempt. degrees.	8 P. M. R. H. per cent.
Charleston . . .	40	79	49	75
Columbia	38	79	46	66
Aiken	—	68	—	67

JULY.

Places.	8 A. M. Tempt. degrees.	8 A. M. R. H. per cent.	8 P. M. Tempt. degrees.	8 P. M. R. H. per cent.
Charleston . . .	79	79	81	78
Columbia	76	76	82	66
Aiken	—	70	—	67

From the table it would appear that the interior is much drier during the evening than the coast, but that the difference in the relative humidity is slight during the morning hours. Assuming that the relative humidity is from 18 per cent. to 20 per cent. lower during the hottest part of the day, and this assumption is warranted,* it would also appear that the interior has a much wider diurnal range than the coast region. Exceedingly low percentages of relative humidity, ranging from 15 per cent. to 25 per cent., occur at all seasons, but when associated with temperatures above 90 degrees they are harmful to vegetation and probably also to animal organism. In other than the hottest seasons, low relative humidity has no noticeable effects on either. Muggy days are not uncommon along the coast, and more than any other climatic feature render the summer season almost unendurable to the unacclimated. In the interior, muggy days are so rare, and their period of duration so short, that they do not detract from the healthfulness of the climate. Muggy weather is conducive to rapid growth of vegetation, and in that manner compensates for the discomforts it causes.

The precipitation of South Carolina is well distributed, both geographically and by seasons. The season of heaviest rainfall is the summer time, when vegetation is most in need of it. The mean annual amount is 49.0 inches, and the variations from this amount are comparatively small—Charleston, with the largest amount, having 53.4, and Stateburg 44.4, the smallest. The next smallest amount is 46.7, at Columbia. Omitting Charleston, Stateburg, and Columbia, whose lengths of record are 33, 20, and 16 years, and using only such stations whose years of record coincide and include the period from 1893 to 1903, it is found that the greatest average annual rainfall is 53.0 at Greenville, closely followed by Trenton, with 52.1 inches; the least is 48.0, at Santuck, with Beaufort only slightly greater, with 48.3 inches. This comparison would indicate that the different parts of the State have practically like amounts of precipitation.

The average spring rainfall is 10.8 inches; summer, 17.0; autumn, 10.1; and winter, 11.6. The range in the spring is between 9.1 at Beaufort and 12.6 at Greenville; the summer range is between 13.6 at Santuck and 20.1 at Charleston; the autumn range is between 8.4 at Stateburg and 12.5 at Charleston; and the winter range is between 8.2 at Beaufort and 14.2 at Greenville. This would indicate that the heaviest rainfall during the spring and winter is over the western parts of the State, and the heaviest summer and autumn rainfall is in the eastern parts, particularly the coast regions. The long record of Charleston and the shorter record at Beaufort both agree in the above conclusion, although the longer record shows the larger amount. The small annual rainfall at Stateburg is probably due to the peculiar location of that station on a spur of the "High Hills of Santee." A thirty-six years average at Camden, about twenty miles north of Stateburg, is even less, being only 43.3 inches.

The average number of days with 0.01 or more precipitation (excluding precipitation from dew) ranges from 87 at Aiken to 119 at Charleston. The probability of rainy days, therefore, ranges from .24 to .33. Stateburg and Blackville show the lowest rain intensity, with 0.40 at both places, while Aiken has an apparent rain intensity of 0.56; this is considered too high in comparison with surrounding stations. Records such as these cannot be made absolutely accurate, and have only an approximate value. Their accuracy depends too much on the personality of the observer, especially at voluntary observers' stations. The monthly, seasonal and annual values are more nearly correct than is that of any

*Handbook of Climatology—Hann (1903).

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single rain, as the gage may or may not be visited and measured after each rain, but the contents will be added to the next rain and be included in the amount of it, with only the loss by evaporation to vitiate the record, while the rain intensity will be practically twice the amount it should be.

Heavy rainfalls, in excess of 12 inches for the month, are not infrequent in South Carolina during June, July, and August, and are rare during the rest of the year. They usually occur in the southern parts. The heaviest monthly rainfall at any stations occurred in August, 1898, when the totals at Port Royal (near Beaufort) and at Gillisonville (about thirty miles inland) were 24.7 and 24.4 inches, respectively. These torrential rains occur only during the passage of West India hurricanes. In the western parts there are comparatively few days having rains in excess of 3.0 inches for any 24 consecutive hours.

Hail storms are seldom of wide extent or destructive, although occasionally they do occur in May and June, seldom in July, and rarely in August, and are practically unknown during the rest of the year. Hail storms are most frequent in the north central and northeastern parts, and rarely occur in the southernmost parts.

The differences in latitude and in elevation from the coast to the mountains have an appreciable influence on the occurrence of snow storms. The line marking the absolute southern limit of snow does not cross or touch this State, although the southernmost part is practically exempt. During the occurrence of severe cold waves, snow falls in the vicinity of Charleston and the adjoining low country, but it is exceedingly rare that it accumulates on the ground, and almost invariably melts as it falls. On the contrary, in the northwestern and even the central parts, it accumulates to depths of from five to ten inches, and sometimes remains on the ground for from two days to a week. The average annual number of days with snow ranges from none at Charleston to five at Santuck.

The late autumn, winter, and early spring precipitation is almost entirely due to the passage of cyclonic storms. The late spring, summer, and early autumn rains are, with few exceptions, of convectional type. The exceptions are of two kinds, the first being due to the occasional passage over this part of the country of cyclonic storms that originate in the southwest; the second being the passage of West India hurricanes that originate in the tropics. The latter are of more frequent occurrence, especially in August and September, but seldom reach the westernmost parts.

The extreme limits of probable annual precipitation, or the absolute driest and wettest years, are not well defined in the accompanying tables, owing to the shortness of the periods of observation, except at Charleston, where the range is between 29.7 and 78.4 inches. At Stateburg (twenty years) the range is between 32.6 and 60.0; at Columbia (sixteen years) the range is between 39.7 and 53.3; at Greenville (ten years) the range is between 42.5 and 77.8 inches.

If a deduction is permissible from so short a record, it appears that the extreme parts of the State have a greater variability, while the central parts have a fairly constant precipitation from year to year. The percentages of variability are much greater when the comparison is between seasons, and still greater between months of like name. The accompanying tables do not include this data, nor have the periods of greatest number of consecutive days without rain been calculated.

Fogs are frequent along the coast and in the low country, and in the winter season in other parts. The sand hills are almost free from them, the average annual number being but one day each year. At Charleston the average annual number is twenty-six days.

The record for prevailing winds is unsatisfactory, but there is so close an agreement between stations in the same parts of the State as to warrant the tentative statement that over the eastern parts the prevailing winds are from the southwest; in the north central parts from the northeast, and in the western parts from the west. Destructive high winds are of rare occurrence, and are of two kinds. The first, usually confined to the western parts, are tornadic; along the coast and adjoining regions they accompany West India hurricanes.

RELATION TO AGRICULTURE.

The relation between the climate of South Carolina and its agricultural resources is complex, and the limits of this article will not permit an exhaustive discussion. Even a list of the flora indigenous to the State would require about all the space assigned.

From the data in the accompanying tables it can be seen that the coast region has a semi-tropical climate; the upper portion has a temperate, or sub-temperate,

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climate; in the central portions there is a gradual blending of the one into the other. This makes it possible to raise practically every variety of crop known to the United States in some portion of South Carolina. The staple crops in the coast region are sea island cotton, corn and tobacco, as well as early truck crops, for which it is admirably adapted. Peaches, pears, and figs attain perfection. Strawberries are an important commercial crop. Oranges and lemons have been grown, but are precarious crops.

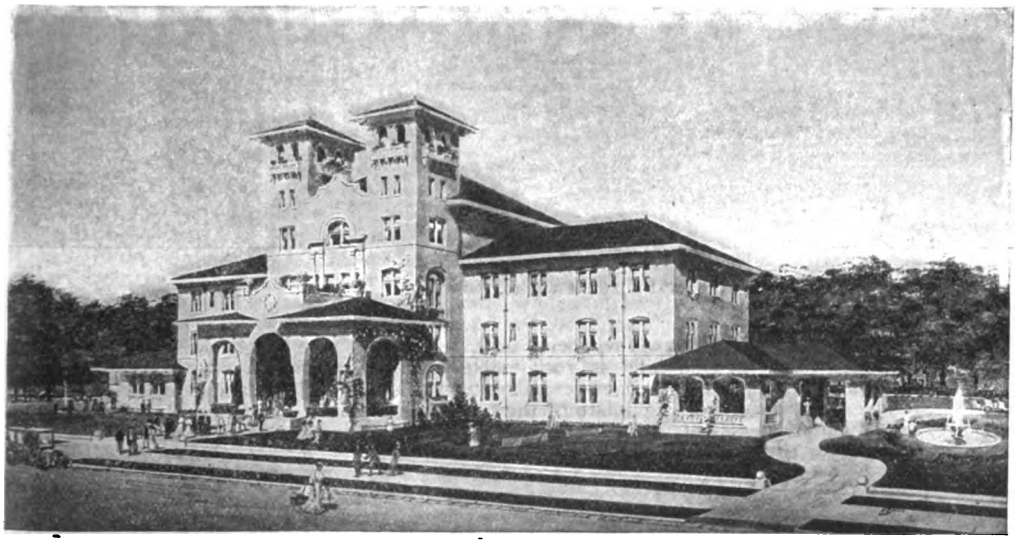
The lower pine belt is adapted to tobacco, cotton, rice, and corn, with the fruits and berries that yield so well in the coast region.

The upper pine belt is the region of greatest yields of cotton, corn, tobacco and melons, and is well adapted for raising fruits and berries of all kinds. Occasionally wheat is cultivated. Oats are one of the staple crops.

The sand hills are peculiarly adapted for the cultivation of peaches and other fruits, but are otherwise of low agricultural value, although they are far from being barren.

The red hils yield well of the staple crops, such as cotton, corn, and oats, under fertilization and intense cultivation.

In the Piedmont region, cotton, corn, wheat, oats and rye, peas and other legumes are staple field crops. Peaches, apples, pears, cherries, and berries of all kinds do well. This region shares with the warmer portions of the State a wide adaptability for the cultivation of all varieties of garden vegetables known to the market gardener in any part of the United States, although as the season is later on the coast, truck farming is not so profitable in the Piedmont region. Truck raised in the western parts of the State would come into competition with that raised on the coasts of Virginia and Maryland.



COLCNIA HOTEL, COLUMBIA.

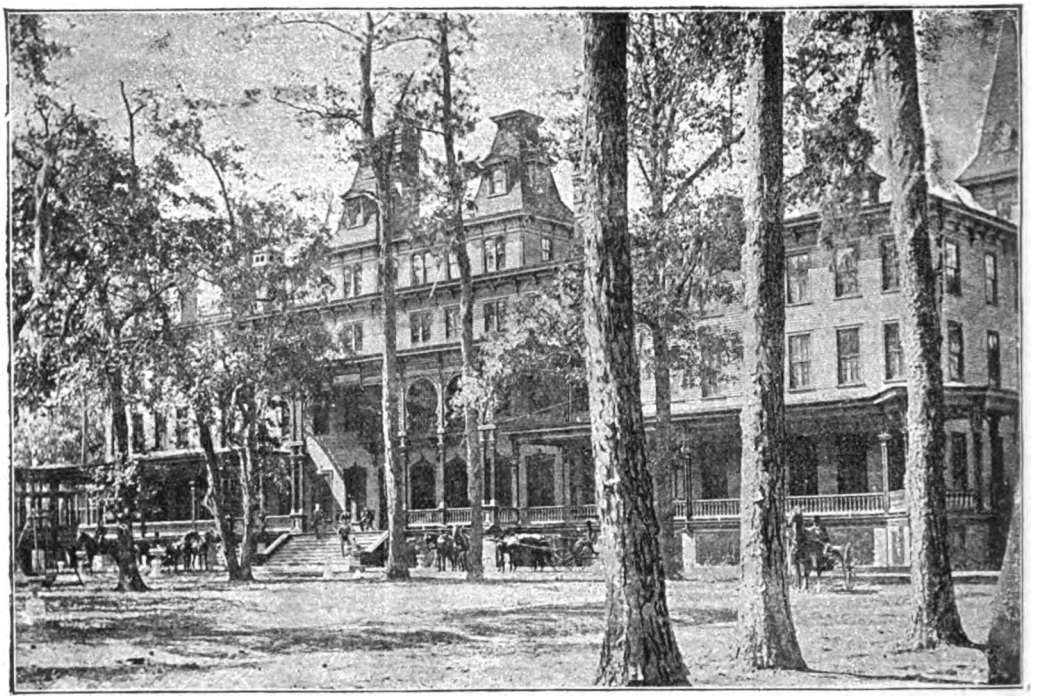
The enumeration of the different crops raised in this State is not complete with the mention of those herein made for the different regions, but minor crops for local consumption include a large number of varieties. Chief among them may be named sweet potatoes, sugarcane, sorghum, peanuts, white potatoes, and the different kinds of root crops, cultivated mainly for forage. Tea is being successfully cultivated at Summerville, and promising experiments are being made to grow coffee trees. The abundance of wild flowers from early in spring to late in autumn makes the State an almost ideal one for the establishment of apiaries, a hitherto almost neglected industry.

The long season during which pasturage is available makes stock-raising and dairying economical, but the present production of neither beef nor dairy products is equal to the consumption. Wheat, and its milled products, oats, corn, and hay are imported in large quantities, not because the climate and soil are not capable of producing these crops abundantly, but because the energies of

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the farmers are largely devoted to raising cotton, while other crops are correspondingly neglected.

All parts of the State are habitable, but some portions are more desirable than others. Perhaps the coast and the lower pine belt regions are least desirable, and have the smallest population per square mile, owing largely to the physical



PINE FOREST INN, SUMMERVILLE.

features of these sections, they being low, level, and have large swamps and marshes. Most of the land is reclaimable, but at considerable expense and necessarily under a comprehensive and extensive system of drainage canals.

The slight difference in climate of the other regions does not materially affect their habitableness, but if any preference exists in regard to healthfulness it is in favor of the sand hill region.

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IN THE FALL

Advantages TO THE Tourist

By E. J. WATSON.

The advantages offered by South Carolina to the tourist are manifold, and there is no portion of the South possessing such rare opportunities for capitalists desiring to invest in winter tourist hotel properties. Below are briefly stated some of the exceptional reasons why this assertion is made:

1. South Carolina has a climate that is unequaled by that of any other State in the United States, the mean annual temperature for the whole State being 63°, the spring mean being 63°, and the winter mean 46°. This climate is of peculiar benefit to invalids, being bracing while sufficiently warm. It is a climate without a peer for persons suffering from tuberculosis, as the health records of the principal places in the 62-64° and 64-66°zones show. When these persons go to sanitariums maintained in the pines for their treatment, their friends and relatives like to be near, and would patronize good tourist hotels liberally.

2. Until a few seasons ago tourists from the East made it the rule to go to Florida points, but now they are beginning to appreciate the value of the climate of the Middle South. The change from the bitter cold of the East and Northwest to the tropical climate of Florida was too great, and an enervating effect on the system was experienced. This is not true of the climate here, and the difference was so much appreciated last season that hundreds of those heretofore Florida-crazed had to be turned away from the new Hampton Terrace at North Augusta, this State, and the Colonia at Columbia. These hotels scored during the season the most notable initial season's successes on record.

3. The best evidence of South Carolina's peculiar fitness for tourist hotels may be found in the fact that the late W. C. Whitney made large investments in Aiken, where he erected his winter home and stables, and where he and quite a colony of exclusive Eastern people have been spending the winter for a number of years. It may be mentioned also that the rare climate of Aiken and Camden, which is duplicated at many other points, has attracted the attention of health-seekers from all parts of the world.

4. Not alone in climate conditions does South Carolina excel as a location for winter tourist hotel properties; her location as to transportation facilities cannot be improved upon. The State is a perfect network of railroad lines, with the capital city, possessing the identical climate of Camden, as a hub of the wheel. Six of the spokes represent the three main trunk railroad lines, running from the North to the South, and the tourist is at all times less than twenty-four hours from New York. The service on these fast trains is almost palatial. Again, the tourist, using Columbia as his basic point, is within less than 40 miles

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of the Tourist Hotel at Batesburg; 84 miles of the Hampton Terrace and Bon Air Hotels at North Augusta and Augusta; less than 65 miles from Aiken; only about 30 miles from Camden; only 146 miles from the De Soto at Savannah; only 164 from the Battery Park and Kenilworth Inn at Asheville, N. C., in the Blue Ridge, and 194 miles from the Mountain Park at Hot Springs, N. C., in the Great Smokies, on the French Broad River; only 129 miles from Charleston, with historic memories, the sea and several high-class hotels; only 107 miles from Summerville, with the Pine Forest Inn, a noted health-seekers' resort in the pines; and within seven and one-half hours' ride of Jacksonville, Fla. This condition would enable a tourist desiring to visit all of the principal Southern resorts to do so at a small cost, and afford a variety in the course of one season that cannot be elsewhere obtained. Columbia is taken as a basic point because it happens to be in the exact center of the State and to have a first-class tourist hotel. What is shown as to Columbia, however, applies with equal force to dozens of splendid tourist resort locations within the ideal climatic zones named above.

5. Another attractive feature of the South Carolina situation may be found in the variety of the scenery surrounding the number of resort places named, and in the model sand and clay public roads, giving ample opportunity for automobiling and horseback riding in the greatest comfort and satisfaction. Again, there are fine hunting grounds almost within a stone's throw of all of the existing and possible locations.

With such a combination of advantages as outlined above, any one looking for the opportunity to make paying investments can scarcely hesitate to decide upon the establishment of tourist hotel properties in South Carolina. The returns from some of the existing properties have been noteworthy, and the field is barely more than touched up to the present time.

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TIN MINING.

Chapter V.

Geology and Mineral Resources.

By
EARLE SLOAN
State Geologist

PREFACE.

The incomplete character of the geological survey of this State imposes limitations to an entirely satisfactory compliance with the request for a brief outline of the general geological subdivisions, and a summary of the mineral resources, of South Carolina. However, from careful field observations undertaken in the preparation of "A Preliminary Report on the Clays of South Carolina," "A Catalogue of the Mineral Localities of South Carolina," and of "The Marls and Other Coastal Plain Formations of South Carolina."* much valuable information has been acquired, which is laid under tribute to the present undertaking, which largely comprises excerpts and adaptations from said reports.

The related reports record due acknowledgment of obligations to partial co-operative services in the following connections:

In Chemical determinations, to Dr. M. B. Hardin, Dr. R. N. Brackett, and Mr. B. F. Robertson, of Clemson College—

In Paleontological discrimination, to Doctors Dall, Vaughan, Burns, Arnold, Bassler and Stanton, of the Smithsonian Institution, and to Dr. T. H. Aldrich—

In the Stratigraphic relations of the Crystalline Region, to Dr. Keith, of the United States Geological Survey—

In Lithological investigations, to Prof. G. W. Corey.

EARLE SLOAN, State Geologist.

EXPLANATORY.

In the conduct of the South Carolina Geological Survey each mineral or geological exposure of economic or scientific interest is accorded a number in accordance with the following summarized system:

Drainage Area.		Coastal Plain.	Crystalline Region.
Savannah	Comprises numbers from	0 to 250	1000 to 2500
Edisto	Comprises numbers from	250 to 500	none
Santee	Comprises numbers from	500 to 750	5000 to 7500
Pee Dee	Comprises numbers from	750 to 999	7500 to 9999

Sub-Areas.—The lesser streams draining the respective exposures afford names for the sub-areas; other distinctive names are applied to the latter in those cases where deposits occur immediately contiguous to the greater streams.

Distances.—The distances indicated are approximate and along air lines.

Location.—Localities are generally indicated by the distance, and the approximate azimuth, of an air line from the nearest point of transportation.

Subdivisions.—In view of the tentative character of the geological subdivisions submitted in this report, a special system has been adopted. The subdivisions of the Crystalline Region are designated Zones, some of which comprise formations pertaining to more than one epoch. The minor subdivisions of the Coastal Plain of South Carolina are herein designated Phases, each of which not only represents a characteristic formation or sub-stage exposed in one or more areas, but expresses an epoch or subdivision of geological time.

*Uncompleted.

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TABLE OF CONTENTS.

Preface .. 77
Explanation of Survey Numbers and Illustrations .. 77
Mineral Production for the Year 1906 .. 79

GENERAL GEOLOGICAL CONDITIONS.

DIVISION I.

Chapter I. General Subdivisions of Crystalline Region—Petrographic Zones: Chatooga, Chauga, Tunnel Hill, Poor Mt., Oconee Creek, Saluda, Anderson-Spartanburg, Cherokee, Abbeville-York, Edgefield-Chesterfield, Vaucluse, Hornsboro .. 79

DIVISION II.

Chapter I. General Subdivisions of Coastal Plain .. 85
Chapter II. Cretaceous: Lower Hamburg Clays, Upper Hamburg Clays, Black Creek Shales, Burches Ferry Marl .. 87
Chapter III. Tertiary: Black Mingo Shales, Congaree Shales, Warley Hill Marl, Santee Marl, Mt. Hope Marl, Ashley-Cooper Marls .. 88
Chapter IV. Oligocene: King's Creek Silex, Brier Creek Marl, Combahee Shale, Parachucla Marl and Shale .. 91
Chapter V. Miocene: Mark's Head Marl, Edisto Marl and Phosphate, Salkehatchie Marl, Goose Creek Marl, Pee Dee Marl, Waccamaw (Mio-Pliocene) .. 91
Chapter VI. Pleistocene (Fresh Water): Cheraw Cobbles and Sands, Hampton Clays, Ten-Mile Sands; Pleistocene (Marine): Wadmalaw Shell Marl, Bohicket Marl Sands, Accabee Gravels .. 92

DIVISION III.

Economic and Industrial.

Part I. Structural Materials:

Granite .. 94
Limestone, Marble and Dolomite .. 97
Slates, Schists and Shales .. 100
Quartz .. 101
Road Building Materials .. 102
Sands .. 103

Part II. Non-Metallic Group (Crystalline Region):

Serpentine and Soapstone .. 103
Asbestos .. 104
Barytes .. 104
Monazite .. 104
Graphite .. 104
Mica and Feldspar .. 106
Corundum .. 107
Gems and Gem Stones .. 107

Part III. Metallic Group:

Gold .. 109
Nickel .. 114
Copper .. 115
Tin .. 116
Lead .. 117
Manganese .. 118
Iron .. 119
Pyrite .. 121

Part IV. Non-Metallic Group (Coastal Plain);

Marl and Glauconite .. 121
Fullers Earth .. 122
Peat .. 123
Sands .. 124
Phosphates .. 125
Clays .. 127

MAP .. 138-139

MINING REVIEW FOR 1906 .. 140

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GENERAL GEOLOGICAL CONDITIONS.

CHAPTER I.

An inspection of the physiography of South Carolina reveals two series of formations, widely differing in their topographical, structural and floral features, and separated by a meandering line, designated the "fall line," which crosses the greater streams at the head of navigation. This line, beginning at North Augusta, proceeds by Columbia and thence by Camden to the North Carolina State line, northeast of Cheraw. The area north of this line, designated the Crystalline Region, comprises the older crystalline rocks and is characterized along its upper limits by a somewhat serrated mountainous profile graduating southerly into intricately ribbed and undulating ridges with deeply sculptured valleys and rapidly flowing streams. South of the fall line we find the younger sedimentary beds, which overlap the crystalline rocks and extend thence to the sea, constituting a vast peneplain known as the Coastal Plain, which along its upper limit characteristically affords extensive plateaus incised with deep valleys in almost abrupt juxtaposition, the included rivers having slow velocities and navigable channels.

MINERAL PRODUCTION OF SOUTH CAROLINA.

For the Year Ending Dec., 1906.

Stone — Granite, Dimension, Jetty and Crushed	$ 258,398
Lime	84,719
Monazite	43,000
†Mica	1,000
†Feldspar	.....
Gold	78,959
Silver	62
*Tin	16,800
Marl	9,450
†Fullers Earth	.....
Phosphate Rock	1,118,875
Clay	175,351
Mineral Waters	348,744
Phosphate Products	7,945,955
Clay Products	830,481
Gas Coke, Gas, Coal Tar	228,817
	$11,090,111

*Mined but not shipped.
†Mine recently opened.
The S. C. Geological Survey is indebted to the U. S. Geological Survey for many items included in the above summary.

Proceeding from the northwest part of the State along a line normal to the coast, we observe distinctive zones of elevation extending approximately parallel with the coast. First the Montaine Region, with its serrated topography culminating in peaks as high as 3,500 feet above the sea level, which rapidly and irregularly declines within thirty miles to the Piedmontaine Region, where the ridges afford elevations from 700 to 900 feet, and the beds of the larger streams are from 500 to 700 feet above the sea level. This "Piedmont Region" gently graduates through the middle country to the fall line, where the crystalline rocks pass under the Coastal Plain formations at elevations above sea level, varying from 119 feet in the deeper valleys to 680 feet on the plateau between the Savannah and the Congaree Rivers, and 597 feet between the Wateree and the Great Pee Dee Rivers. Borings south of the fall line show the inclination of the surface of the crystalline rocks greatly increased, attaining in the Savannah area 54 feet to the mile and in the Pee Dee area 50 feet to the mile, but apparently less along the line between the two. The overlapping Coastal Plain formations, as exposed along the upper limits of their plateaus, as above indicated, attain a maximum elevation of 680 feet from which, through the intervening sandhill region, they decline within 20 miles to an elevation of 400 feet, and thence gently graduate through 80 miles of low country to the sea level at the coast. An examination of the structural and general geological features shows the Crystalline Region to be constituted of rock formations more or less hard, foliated and crystalline; often pitched at high angles, folded, faulted and otherwise dislocated, and deficient in fossil remains.

The Coastal Plain exposes loosely aggregated materials without distinct stratification, and some stratified materials with a gentle dip, the latter more or less rich in fossil remains, the former rarely affording biotic evidences.

Accordingly, the geological features of South Carolina admit of systematic treatment under two general divisions, to wit:

DIVISION I.—THE CRYSTALLINE AREA.

DIVISION II.—THE COASTAL PLAIN.

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DIVISION I.—THE CRYSTALLINE AREA

CHAPTER I.—GENERAL SUBDIVISIONS

The Crystalline Region affords natural subdivisions which are exhibited in successive groups of rocks exposed along zones trending chiefly in a northeasterly and southwesterly direction, or approximately parallel to the Appalachian System, with conspicuous local exceptions.

In view of the irregularly exhibited succession of the geological groups in the crystalline area of South Carolina, and in the absence of sufficient data to warrant their definite discrimination in accordance with the accepted system of chronological grouping, it will suffice for the purpose of system to view each individualized belt of rocks with its characteristic economic minerals as a unit or "zone." To facilitate reference, these "zones" are designated by associate local names, which are herewith tabulated in the order of their geographic succession, or as the zones are encountered upon proceeding southeasterly from the northwest corner of the State, this direction being normal to, or across, the strike of the zones. The geographic succession thus afforded does not uniformly conform to the geologic order of age of the related formations, for whereas some of the original formations of the crystalline area are largely constituted of igneous rocks and their altered forms, all of which, except some of the intrusive, pertain perhaps to the oldest subdivisions of the Archean time as exhibited in this State, there are on both sides of these older Archean formations several groups of highly metamorphosed sedimentary rocks, some of which represent later phases of the Archean, some Algonkian, some Cambrian, and some possibly are of even later origin in the Paleozoic time; but no Carboniferous measures have been observed.

The Mesozoic period finds expression in an ancient trough beginning in the upper part of Chesterfield County and extending thence northerly; it is filled with Jura-Trias rocks highly deformed by numerous intrusions of igneous dikes.

GEOLOGICAL FORMATIONS OF THE CRYSTALLINE REGION

Petrographic Subdivisions.	Probable Age Equivalents.
Chatooga Zone	Archean.
Chauga Zone	Cambrian (?).
Tunnel Hill Zone	Archean.
Poor Mt. Zone	Cambrian (?).
Oconee Creek Zone	Archean.
Saluda Zone	Archean.
Anderson-Spartanburg Zone	Archean.
Cherokee Zone (Lower)	Cambrian (?).
Cherokee Zone (Upper)	Cambrian (?).
Abbeville-York Zone	Archean.
Edgefield-Chesterfield Zone	Algonkian (?).
Vaucluse Zone	Archean.
Hornsboro Zone	Jura-Trias.

Disturbance, deformation and surface obscuration have been so great that these zones are rarely characterized by sharp definite lines of separation.

Some of these zones, although widely separated geographically and therefore designated by different names, are similar in age and character; others will probably be further subdivided by the results of future observations.

CHAPTER II.—ZONE DESCRIPTIONS

ANDERSON-SPARTANBURG ZONE.

The Anderson-Spartanburg Zone probably represents the most prominent body of the oldest phase of the Archean exposed in South Carolina, to which all other rocks in this State are probably junior, excepting tongues of the corresponding Carolina Gneiss series which occupy portions of the adjacent zones.

It comprises a wide belt bounded on the west by the Tyger Zone along a line which irregularly extends from the 82° longitude on the North Carolina line to Brown's Ferry on the Savannah River; on the north by the State line; on the east by an irregular line which extends from a point approximately one mile east of Grover, along the Whitaker's Mt. Ridge, to the mouth of Buffalo Creek, thence immediately north of Gaffney to Thicketty Station, thence

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slightly west of Thicketty Creek to West Mt., thence by Graycourt Knob, thence near Wares Shoals (Saluda River), thence north of Abbeville and immediately south of Lowndesville, whence it proceeds along Rosses Creek to the Savannah River, up which the boundary extends to Brown's Ferry. It includes the upper part of Cherokee, the greater portion of Spartanburg, the lower half of Greenville, the lower three-fourths of Anderson and a narrow northerly strip of Abbeville Counties.

Rocks.—It is largely constituted of the Carolina Gneiss series and subordinately of the Roan Gneiss or hornblende series, and intrusive granite, diabase and diorite. The rocks comprise granite, granitite, gneissoid slates, mica schists and slates, hornblende schists, graphite schists, etc. Pegmatization has been extensive. Many of the rocks are garnetiferous.

Economic Deposits.—Granite, soapstone, mica, feldspar, asbestos, graphite schists, corundum, beryl, amethyst, garnet, zircon, monazite, columbite, magnetite, hematite, gold, tin, lead. Peat and brick clays appear as more recent deposits.

This constitutes the great monazite belt which extends from Cherokee to Anderson Counties.

Industrial.—Monazite is extensively mined in Cherokee, Spartanburg and Greenville Counties, and to a limited extent in Anderson County. Mica is mined in Greenville and spasmodically in Anderson Counties, with feldspar (and columbite) as an incidental product in Greenville County. Asbestos is extracted in exploration. Tin is mined in Cherokee County.

TYGER ZONE.

The Tyger Zone (Archean) is not conspicuously separated from the Anderson-Spartanburg Zone, excepting that in addition to the Carolina Gneiss series it comprises the very prominent development of the Roan Gneiss or hornblende series. This zone comprises an irregularly shaped tract bounded on the west by the Saluda Zone, along a line extending southwesterly from Gap Creek towards Pendleton and thence to the Tugaloo River near the point where intersected by the 83° of longitude; on the north it is delimited by the North Carolina line; on the southeast by a meandering line from a point of the North Carolina State line (near 82° of longitude) to the Savannah River near Brown's Ferry; the latter river and the Tugaloo River complete the boundary to the 83° of longitude.

Rocks.—It is constituted chiefly of the Carolina Gneiss series with a prominent development of the Roan Gneiss series, and some Table Rock Granite. It comprises granite-gneiss exposed in successive belts (coarse porphyritic prominent); granite; feldspar; porphyry; granitite; gneissoid slates; mica slates and schists; hornblende schists; graphite schists; dikes of granite, pegmatite, diabase, and diorite. Many of the rocks are garnetiferous.

Economic Deposits.—Granite, soapstone, mica, feldspar, asbestos, graphite schists, corundum, beryl, amethyst, garnet, zircon, monazite, columbite, magnetite (iron ore), hematite (iron ore), gold. Peat and brick clays appear as more recent deposits.

CHATOOGA ZONE.

The Chatooga Zone (Archean) comprises narrow parallel belts of the Carolina Gneiss series and of the Table Rock Granite, and thin bands of the Roan Gneiss series. It includes the narrow belt between the Chatooga River and a line extending southwesterly from a point on the North Carolina line, about half way between the Toxaway and Whitewater Rivers, to the Tugaloo River, slightly above its confluence with Brasstown Creek.

Rocks.—The northwesterly belt of this zone exhibits a granite similar to the Table Rock granite of the Saluda Zone, which is slightly schistose in structure, but granitic in texture, the color being a "pepper and salt" gray.

The southeasterly belt, which sharply abuts the limestone series (Chauga Zone), consists of highly schistose gneissoids, granites, mica schists, etc., of the Carolina Gneiss series; it includes pegmatites, peridotites, etc.

Thin lines of the Roan Gneiss (hornblende series) are observed in this area. This zone is essentially Archean.

Economic Deposits.—Feldspar, mica, graphite, corundum, soapstone, galena, gold.

Industrial.—No mines now in operation. Gold and lead mines formerly worked. Corundum and mica formerly mined.

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OCONEE CREEK ZONE.

Oconee Creek Zone (Archean) comprises a belt bounded on the northwest by the Poor Mt. Zone; on the southwest by the Tugaloo River; on the northeast by the North Carolina line from a point intermediate to the Horsepasture River and Toxaway Creek to a point about two miles east of Sassafras Gap; on the southeast by a line from the latter point extending to the Tugaloo River, near the confluence of the Chauga River.

This zone consists chiefly of granite and granite-gneiss derived from porphyry. Its most characteristic form consists of repeated thin wavy bands of quartz, biotite and muscovite with fine crystalline texture, separated by eyes of pink feldspar (microcline). It probably pertains to Keith's Henderson Granite, of which characteristic exposures may be seen at "The Tunnel," in the Tunnel Hill Zone, and on Oconee Creek immediately below the dam at Lays mill. A granite similar in its petrograpic relations may be observed in the Vaucluse Zone at a small quarry 0.1 mile north of the jail at Edgefield. The Oconee Creek series is regarded as junior to the Carolina Gneiss series.

Economic Deposits.—Granite. This stone with its staggered eyes affords attractive architectural effects.

TUNNELL HILL ZONE.

Tunnel Hill Zone (Archean) comprises a narrow belt bounded on the northwest by the Chauga Zone and on the southeast by a line extending from the Tugaloo River near the mouth of Barton Creek, immediately north of Rich Mt., north of Horse Shoe Bend, and thence northeasterly. It constitutes a narrow tongue between the Chauga and the Poor Mt. limestone zones.

Rocks.—Porphyritic granite-gneiss, and gneissoids. Probable equivalent of Keith's "Henderson Granite," assigned to the Archean. Abundant strain effects prevail. This rock appears to have resulted from the granulation and re-crystallization of a porphyritic granite. (See Granites, Sur. No. 1402+2).

Economic Deposits.—The Tunnel Hill granite-gneiss is a very hard rock comprising thin bands curved to enfold rounded crystal individuals of pink feldspar (Kleine augen gneiss).

Industrial.—No deposits along this zone are mined.

Tunnel Hill gneiss is susceptible of attractive architectural effects.

SALUDA ZONE.

Saluda Zone (partly Archean) comprises an irregularly shaped area bordered on the northwest by the Oconee Creek Zone, from the Tugaloo River to the North Carolina line; this State line constitutes the northerly limit of this zone to the head of Gap Creek (near Saluda Gap). It is separated from the Tyger Zone on the southeast by a line extending from Gap Creek southwesterly near Pendleton, and thence to the Tugaloo River near longitude 83° (above Hattons Ford), whence the Tugaloo River completes the westerly boundary to the initial point.

Rocks.—Granite, granite-gneisses (some porphyritic), granulite, gneissoid slates and schists, hornblende slates and schists (very prominent), peridotite, dikes of granite, diorite (occasional), pegmatite.

Economic Deposits.—Granite, gneiss, feldspar, mica, asbestos, corundum, serpentine, soapstone, gold, magnetite. Tertiary cobble-stones exposed at several localities.

Industrial.—Cochran Gold Mine, Hagood Asbestos and Mica Mines and the Leroy Mica Mine are spasmodically worked; Beverly, Pendleton and Westminster granite and gneiss quarries, and Fairview Soapstone Quarry are intermittently operated.

ABBEVILLE-YORK ZONE.

Abbeville-York Zone. This area is very wide along its northerly boundary which is constituted by the State line, but is narrow along its southwest boundary formed by the Savannah River. It is bounded on the northwest by the Cherokee and by the Anderson-Spartanburg Zones; on the southeast by a line which proceeds southwesterly from a point on the State line, 1.5 miles northwest of Hornsboro, thence crossing Lynches River 1.8 miles above the mouth of Rocky Creek, thence to Heath Springs, thence below Peays Ferry

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(Wateree River) by Longtown, thence to the head of Sawneys Creek, thence across Broad River (above its confluence with Little River), thence south of Little Mt., thence north of the Culbreath Mine, thence north of Meeting Street (2 miles), and thence direct to a point near McCormick, whence it continues to the Savannah River, south of the mouth of Little River.

Marble, of seeming upper Cherokee equivalence, appears along the upper limit of the Abbeville-York Zone interruptedly from the east side of the Enoree River to the east side of the Saluda River.

Rocks.—Gneissoids, granite, syenite, quartz, mica and hornblende schists and slates, quartzite, gabbro, trachyte, porphyries, sericitè schists, quartz monzonite schists, diorite slates, diorite, trachyte, pyroxenite, amphibolite, felsite, soapstone.

Economic Deposits.—Enormous beds of superb granite, syenite, porphyry, serpentine, soapstone, quartzite, quartz, felsite road metal (local "chert"), biotite, corundum, polishing sands, hematite, magnetite, manganese, copper, nickel, gold, marble.

Industrial.—Granite, fine and medium coarse grained, is extensively quarried in Fairfield, Newberry and Lancaster Counties; to more limited extent in Laurens and York Counties; extensively prevails in upper Kershaw County. Porphyritic granites (pink feldspar—"Scotch granite") quarried in Greenwood County; occur also in Fairfield and Kershaw Counties; "chert" (felsite) quarried in Newberry County (occurs at various points). Barytes intermittently mined in Cherokee County. Marble is quarried at Masters Kiln for neighborhood uses. Manganese being explored in Abbeville County (near McCormick). Nickel, with gold, in process of exploration in Saluda County. Gold actively mined in York, Union, Abbeville and Lancaster Counties.

VAUCLUSE ZONE.

Vaucluse Zone. The Vaucluse area is bounded on the northwest by the Edgefield-Chesterfield Zone; on the southwest by the Savannah River; the delimiting line on the southeast is highly irregular by reason of the variable distribution of the overlapping coastal plain sands; the line which interruptedly connects the tongued projections of this area on the southeast, beginning near Hamburg, extends by Vaucluse, Miles Mill, Fox Bridge (Chinquepin Creek), Quattlebaum Mill (Lightwood Creek), thence by Red Bank Creek to Granby; beyond which this formation is obscured to Granny's Quarter, whence it is successively observed at the old Sumter Quarry, at the Taxehaw 40-acre Rock, and at the North Carolina line, near the Great Pee Dee River.

Rocks.—The rocks of this area comprise granite, granite-gneiss, gneissoid slates, mica schists, hornblende slates, quartzite, and kaolinized schists.

Economic Deposits.—Granite and gneiss; kaolinized schists.

Industrial.—Granite quarried at Parkhill and in the town of Edgefield. The kaolinized schists have been long used to bond the more refractory clays from the Cretaceous in the manufacture of crockery-ware and refractory wares.

EDGEFIELD-CHESTERFIELD ZONE.

Edgefield-Chesterfield Zone (Algonkian?). Bounded on the northwest by the Abbeville-York Zone; on the north by the Hornsboro Zone and the State line; on the southeast by a line proceeding from the point where Whites Creek enters South Carolina (Marlboro County) along said creek to the Pee Dee, thence by Catarrh, thence south of Granny's Quarter, thence crossing the Wateree River, near Camden, thence up Rice Creek and down Crane Creek, and thence crossing the Broad River three miles north of Columbia, thence across the Dutch Fork and by Half Way Swamp, to a point near Edgefield, whence it proceeds southwesterly to the Savannah River (near Scotts Ferry), the river completing the boundary on the west. A division extends southwesterly by Edgefield by reason of the granite anticline uplift, which diverts a sub-zone of these schists, and a part of the slates towards Hamburg with a southeasterly dip.

Rocks.—Slates derived from the alteration of basic igneous rocks constitutes the main mass; along both sides of the argillites the sericite schists interruptedly prevail. It appears that the sericite schists originated in the alteration of the tuffs and porphyries which interruptedly occur along the southerly line of the Abbeville-York Zone, with a corresponding but more limited belt along the opposite side of the Edgefield-Chesterfield Zone.

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Economic Deposits.—Gold, fair grades of slate, sericite.

Some of the slates of this zone are excellently adapted to the manufacture of common and vitrified bricks.

Industrial.—Gold mining, quarrying of slate for neighborhood structural uses.

CHAUGA ZONE.

Chauga Zone (Cambrian?). This zone comprises a narrow band bounded on the northwest by the Chatooga Zone; and on the southeast by a line extending from near the point where the Toxaway River enters South Carolina to the Tugaloo River, slightly below its confluence with Brasstown Creek.

Rocks.—Fine grained dark shimmering quartz schist, mica schists, graphite slates, limestone, etc. This group probably corresponds to Keith's "Brevard Schist," assigned to the Cambrian.

Economic Deposits.—Limestone, graphite, gold.

Industrial.—Limestone quarries operated during "the fifties," now idle.

POOR MT. ZONE.

This formation is exposed along Rich Mt., Poor Mt. and Potato Top Mt., which establishes the southeasterly limit of the prominently elevated region of Oconee County. The soluble character of the limestone has largely caused its disappearance from the depressed areas intermediate to the successive knobs of ridges, where it has been rapidly drained it has persisted. The exposure of this series from a high point on Poor Mt. to a low point on a dale of Rich Mt., indicates a moderate dip to the southeast.

Rocks.—Narrow belt of Carolina Gneiss series underlying the Poor Mt. series, which comprises: Dark calcareous slates, marble, thin hornblende schists, ottrelite (?) schists, sandstones, itacolumite.

The white dolomitic marble of this zone grades to a dark green pyroxenic mass, in places altered by dynamo-metamorphic action to hornblende. This series probably pertains to Keith's "Brevard Schist," assigned to the Cambrian.

Economic Deposits.—Marble, limestone.

Industrial.—Marble quarried in desultory manner for neighborhood uses.

CHEROKEE ZONE.

Cherokee Zone (Cambrian?). This zone comprises a small area bounded on the southeast by a line which extends southwesterly from the point where King's Creek crosses the North Carolina line, by Silver Mt., across Broad River, and thence across Thicketty Creek below the mouth of Limestone Creek to a point west of their confluence, where it encounters the Anderson-Spartanburg Zone; which zone thence bounds it on the west and northwest to the North Carolina line; the State line constitutes the boundary on the north.

Some corresponding formations of probable equivalence are interruptedly exposed in a narrow, much obscured band which extends towards the Saluda River, along the line which separates the Anderson-Spartanburg Zone from the Abbeville-York Zone, across Laurens County; exhibited at Frenchman's Creek, at Mahaffey Kiln, at Masters Kiln and at Raysors Kiln.

Rocks.—Siliceous slates (slightly carbonic), quartzite, hornblende slates variably merging to limestone and marble; ottrelite schists; itacolumite; slates interbedded with hematite; lithia granite; gneiss; black slates; mica slates; metamorphosed igneous magnesian rocks with lenticles of magnetite and bodies of asbestos; siliceous and micaceous hematite, and specular iron ores intercalated with slates; massive fine grained gray mica slates; intrusive diabase (distinctly foliated).

Economic Deposits.—Marble, limestone, dolomite, flagstone, quartzite, magnetite, hematite, specular iron, siderite, lead, gold, extensive residual deposits of fire clays, etc.

Industrial.—Limestone and marble beds are extensively quarried near Gaffney for conversion into lime; marble quarried at Masters Kiln (Laurens County). Former extensive utilization of iron deposits suspended on account of charcoal impossibilities. Clays for fire and face brick extensively extracted.

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HORNSBORO ZONE.

Hornsboro Zone (Jura-Trias). This formation is bounded on the north by the North Carolina line, from a point about three miles east of Hornsboro to a point about 1.2 miles west of Hornsboro; the delimiting line then proceeds southeasterly about one (1) mile, thence easterly 5 miles and thence to the initial point on the North Carolina line; from the easterly half of this area a narrow strip has been removed through erosion by the Clay Creek waters, which expose the underlying Edgefield-Chesterfield slates.

The Hornsboro rocks comprise brown-red and gray sandstones, varying in places to a purple-brown indurated clay. Numerous intrusive masses of diabase have greatly disturbed, and partly metamorphosed to secondary forms, portions of the red sandstones.

The bodies exhibited in this State are not sufficiently homogeneous to afford valuable quarries. In North Carolina, where these beds attain much greater thickness, as in the Jupiter area, workable beds of coal are included by the Jura-Trias. In many places the coal seams have been disconnected by the diabase intrusions, and exhibit so much pyrite that profitable mining is impossible.

The close of the Jura-Trias in South Carolina was characterized by the intrusion of a vast series of diabase dikes, prominent in the Jura-Trias and in the Edgefield-Chesterfield formations, but progressively less towards the Piedmont.

DIVISION II.—COASTAL PLAIN.

CHAPTER I.—GEOLOGICAL SUBDIVISIONS OF COASTAL PLAIN

The successive ages of the Coastal Plain formations of South Carolina, with their respectively characteristic life forms, or mineral and lithological individualities, afford three main divisions or groups, which, cited in the order of seniority, are "The Cretaceous," "The Tertiary," "The Pleistocene," and a subordinate group, "The Recent," each of which through characteristic variations affords minor subdivisions or stages, indicated as Type Beds.

The Coastal Plain of South Carolina affords natural subdivisions of its older formations, roughly concentric to St. Helena Sound, to which an area east of the Pee Dee River constitutes an irregular exception. The component formations comprise an extensive series of sedimentary materials of clastic character, some of which have been indurated by chemical solutions at the normal temperatures which successively prevailed. There is no schistosity nor foliation due to intense crustal movements or heat; such parting planes as are observed are bedding planes due to successive changes in the character of sedimentation. The change in the character of the materials was determined by variations in the depth of the water, and periodic changes in the velocity of its currents; or to successive elevations and depressions, through which the shore line has irregularly advanced and receded (chiefly by reason of orographic movements), sometimes as a consistent whole, at others with a barrier of islands or an archipelago remaining superior to the ocean level and therefore above the influence of the sediments or marls, which characterized the surrounding formations, which were subsequently deposited in the submerged areas. Therefore some portions of the older formations of the Coastal Plain are exposed unencumbered by junior formations; always excepting, however, the loose sands and clays which at the close of the Lafayette phase covered the entire Coastal Plain and a large portion of the Crystalline Region.

Fossil or life forms, which in the older crystalline area were more primitive and more restricted in varieties and numbers, and which were probably almost entirely destroyed by the intense heat and other metamorphic influences which periodically prevailed during the earlier history of the earth, have survived in numerous varieties and species in the Coastal Plain formations.

In the geological sequence of the South Carolina formations a vast gap exists along the fall line, which separates the crystalline area from the Coastal Plain; here logically belong the Upper Silurian, with its vast fossiliferous iron ore beds, and the Carboniferous with its coal measures, which characterize the Birmingham and other districts west of the line of the Blue Ridge Mountains; east of which line the conditions appear to have been unfavorable; or, if they obtained, the associate formations were subsequently effaced or submerged beyond the depths hitherto explored by borings, and therefore beyond economic consideration.

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TENTATIVE SUB-DIVISIONS OF
SOUTH CAROLINA GEOLOGICAL FORMATIONS

	SERIES	PERIODS OR GROUPS			SO. CA. TYPE BEDS	SYM	SYM
COASTAL PLAIN	CENOZOIC		RECENT		COAST SANDS	RC	
					RIVER BOTTOMS	RR	
			PLEISTOCENE		SEA ISLAND SANDS	PS	
					WANDO CLAYS	PWc	
					COLUMBIA SANDS, Etc.	PC	
					ACCABEE PHOS-GRAVELS	PA	
					BOHICKET MARL SANDS	PB	
					WADMALAW SHELL-MARL	PW	
					*TEN-MILE SANDS	PX	
					HAMPTON CLAYS	PH	
					CHERAW COBBLES, Etc.	PL	
		TERTIARY	NEOGENE	PLIOCENE	WACCAMAW MARL	MW	
					PEE DEE MARL	MP	
				MIOCENE	GOOSE CREEK MARL	MG	
					*SALKEHATCHIE MARL	MS	
					EDISTO MARLS AND PHOS.	ME	
					MARKS HEAD MARL	MM	
			EOCENE	UPPER	PARACHUCLA SHALE	OP	
					PARACHUCLA MARL	OP	
						OA	
				OLIGOCENE	COMBAHEE SHALE	OC	
					BRIER CREEK MARL	OB	
					KINGS CREEK SILEX	OK	
				MIDDLE	*ASHLEY-COOPER MARLS	E-O	
				UPPER	MT. HOPE MARL	EMt	
					BARNWELL BUHR SANDS	EB	
					SANTEE MARL	ES	
				MIDDLE	WARLEY HILL MARL	EW	
					CONGAREE SHALES, Etc.	EC	
				LOWER	BLACK MINGO SHALES	EM	
	MESOZOIC	CRETACEOUS	UPPER CRETACEOUS		BURCHES FERRY MARL	KBF	
					BLACK CREEK SHALE	KB	
			LOWER CRETACEOUS		MIDDENDORF CLAYS, Etc.	KM	
					UPPER HAMBURG CLAYS	KH	
					LOWER HAMBURG CLAYS	KH	
		JURASSIC TRIASSIC	JURA-TRIAS		HORNSBORO SANDSTONE	JT	
	GAP?	PERMIAN					
		CARBONIFEROUS					
		DEVONIAN					

CRYSTALLINE REGION		PETROGRAPHIC ZONES		SYMBOL	
	PALEOZOIC?		POOR MT.	Є	CHEROKEE UPPER
			CHAUGA	Є	CHEROKEE LOWER
				A	EDGEFIELD-CHESTERFIELD
					VAUCLUSE
					ABBEVILLE-YORK
			*SALUDA	AR	
			TUNNEL-HILL	AR	
			OCONEE-CREEK	AR	
	ARCHEAN		CHATOOGA	AR	
			TYGER	AR	
			ANDERSON-SPARTANBURG (ARc)		

†Suspected Position. *Position Uncertain.

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ECONOMIC DEPOSITS OF THE COASTAL PLAIN FORMATIONS

RECENT.—Thin beds of sands and clays in sections subject to recent inundation. Economic products: Structural sands and some brick clays.

PLEISTOCENE.—Eolean sands, Lafayette clays, loams, sands, shell marl, cobbles. Prominently developed across the upper part of the Coastal Plain. Economic products: Sand supply for locomotives, molding sand; cobblestones for road construction and railway ballast; marl.

PLIOCENE, MIOCENE AND OLIGOCENE.—Marls, clays and sands. Economic products: Fullers earth, brick clays, sewer pipe and tile clay; phosphate rock; marl, adapted to the manufacture of cement and lime; marl and greensand for agricultural purposes.

EOCENE.—Dark laminated clays, sands, ferruginous sandstone, Eocene grit, buhr-rock; fine-grained yellow Sienna and purple sands and loams; shells, greensand, marl, siliceous clay inclosing layer of buhr-rock, coarse fossiliferous sands, sandy loams, lignitic clay. Occupy approximately the median two-fourths of the Coastal Plain, irregularly parallel to the fall line. Economic products: Fullers earth; potters clay; structural and mill stones; lime marl; greensand and marl for agricultural purposes.

CRETACEOUS.—*Burches Ferry.*—Buff-colored high grade marl; greensand marl.

Black Creek.—Soft shales, black clay. Economic products: Lime marls; agricultural marls; soft shales and black clays suited to the manufacture of brick.

Middendorf.—White sands (25 feet), bed of dense white and drab kaolin with waxy luster (fossiliferous); harsh sands; vari-colored cross-bedded fine grained sands; thin seams of colored clay interlaminated with sands; gravel. Economic products: China clays; paper stock clays; "glass sand."

Hamburg.—From nil to eighteen feet of fine white kaolin white sand in micaceous kaolinitic matrix; vari-colored banded sands; arkose; purple and white kaolin; arkose; sub-angular bowlders and fragments of quartz, slate and gneiss in arkose matrix. (Beds of lignitic clay and arkose revealed by borings below the valley lines probably are the equivalents of the Potomac or basal member of the Cretaceous.) Economic products: China clays, paper stock clays, potters clay, "glass sand."

CHAPTER II.—CRETACEOUS

LOWER HAMBURG.	BLACK CREEK.
UPPER HAMBURG.	BURCHES FERRY.

Immediately south of the fall line occurs the Cretaceous, or lowest and oldest member of the Coastal Plain series of formations, which in length is co-extensive with the fall line, but varies much in the width exposed. Thus its exposure begins with a narrow belt in Aiken County and increases in width as it extends easterly, affording its greatest width of exposure along the Great Pee Dee River, where it is observed with its extreme limits ninety miles apart, but probably with two Tertiary tongues breaking its continuity.

The Cretaceous formations are interruptedly exposed by the Savannah River from the mouth of Foxes Creek to the mouth of Hollow Creek (21 miles); by the Edisto River from its source to its confluence with Cedar Creek (22 miles); by the Congaree River from the Saluda River to Buckingham Bluff on the Santee (36 miles); by the Wateree River from Sanders Creek to Buckingham Bluff (35 miles); by Black River along its tributaries in Kershaw County and (with a wide intervening area of the Tertiary) from Perkins Bluff (Williamsburg County) to the confluence of Black Mingo (Georgetown County); along Lynches River from near Catarrh to the railway bridge near McBee (below which the Cretaceous is obscured to the mouth of Sparrow Swamp), and from the confluence of Sparrow Swamp to the Great Pee Dee River; by the Great Pee Dee River from its confluence with White's Creek (Chesterfield County), interruptedly to Lower Topsaw Landing (91 miles); and by the Waccamaw River interruptedly from the North Carolina line to Conway.

LOWER CRETACEOUS.

The Lower Hamburg and *Upper Hamburg* and the *Middendorf Phases* comprise sands, clays and arkose which are exposed in the upper three-fourths of Aiken County, in the greater part of Lexington County, in the lower part of Richland County, in the body of Kershaw County, in the lower part of Lancaster County, and in the northerly part of Chesterfield County.

Economic Deposits.—China clay, paper stock clay, fire clay.

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Upper Cretaceous.

The *Black Creek Shale* is exposed along Black Creek in Darlington and Florence Counties, and along the Pee Dee Valley interruptedly from near Society Hill to Jeffries Creek, where it passes under the Burches Ferry marl. Its probable equivalent extends easterly through Marion County, where it is exposed in the bed of the Little Pee Dee tributaries.

Burches Ferry Marl is exposed in Florence County, south of Jeffries Creek, and thence along the Great Pee Dee to Topsaw Landing; it is interruptedly exposed along Lynches River from Old Effingham to its confluence with the Great Pee Dee; along Black Mingo from Indianfield Church to Black River; along Black River from Perkins Bluff to the confluence of Black Mingo; along the Waccamaw from North Carolina to a point near Conway.

Economic Deposits.—The Black Creek shales represent a fair grade of brick material; the Burches Ferry marl is adapted to agricultural uses.

CHAPTER III.—TERTIARY PERIOD

Lower Eocene. Middle Eocene. Upper Eocene.

Geographic Limits.—Exclusive of the area of the Lower Cretaceous formations which constitute an irregular band south of, and co-extensive with, the fall line, and exclusive of portions of the Black Creek and Burches Ferry Cretaceous areas, duly noted, the surface of the Coastal Plain is occupied by the Tertiary formations; the latter underly a coastal band, and an irregular all-pervading superficial mantle, consisting of Pleistocene and recent materials.

The line delimiting the Tertiary (Eocene) on the north extends from near the confluence of Hollow Creek and the Savannah River, in Aiken County, by Beech Island, Aiken, Perry, Horseys Bridge (North Fork Edisto River), and Gaston to the vicinity of Congaree Bluff (with tongues approximately extending respectively to Vaucluse, Seivern, Leesville and to the head of Congaree Creek). Thence it proceeds down the western scarp of the Congaree River, and the embayments of its tributaries to Lang Syne and Warley Hill (with a narrow broken belt extending along the western scarp of the Wateree Swamp, and capping such prominent elevations as Cooks Mt., as far north as Black Mt.).

From Warleys Hill the littoral line crosses the Santee River at the mouth of Fullers Earth Creek and proceeds thence by Wedgefield to Catchall, whence it is largly obscured northeasterly to the eastern division of the Tertiary. Near Sumter a second littoral line probably obtained with one branch extending northeasterly, and the other southerly to probably surround the Carolina Ridge. From Sumter it probably passes slightly east of Cades and curved around the Carolina Ridge east of Georgetown, and thence entered the eastern division; this, however, is indefinite.

The line delimiting this division on the north probably proceeds from Catchall by Bishopville, thence up the eastern scarp of Lynches River towards Stokes Bridge, and thence northeasterly by Society Hill, whence it probably proceeds south of Naked Creek to the North Carolina line.

Physiography and Geognosy.—The Tertiary formations of South Carolina are largely composed of bedded sands, shales, marls, phosphate rock, glauconites, clays and pebbles. The Tertiary period affords in the variable succession of materials and in the advance and retreat of the shore lines of its successive phases, evidences of great oscillations; sometimes due to regional movements in the level of the earth's surface of either secular or sudden character, and sometimes possibly to a general secular elevation of the level of the ocean.

In the western areas of the South Carolina Tertiary the littoral plane of the Tertiary period (Lafayette excluded) gradually ascends from the valley lines to constitute tongues overlapping the Cretaceous formations (at elevations varying from 300 to 530 feet); the eastern area of the South Carolina Tertiary was not afforded the final amount of elevation which characterized the former, the maximum elevation probably does not exceed 400 feet M. L. T.

The western Tertiary and the eastern Tertiary divisions of the South Carolina area correspond through a very limited range of phases. The several series of thick Eocene marls which characterize the Santee Tertiary are apparently entirely missing in the eastern area. In the eastern area the sea bottom appears not to have been sufficiently depressed during the Eocene to admit waters of sufficient depth to form marls; at the period of maximum Eocene depression this division responded to the extent of admitting thin beds of shales and sands.

As the Eocene period closed, its formations gradually emerged superior to the

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level of the sea; its life forms yielded to the transitional character expressed in the Oligocene.

In the westerly division of the Tertiary a pronounced depression extended from the St. Georges anticline westerly, including a large portion of the adjacent Coastal Plain of Georgia. The Oligocene waters pertaining to this area first abounded in coral forms now observed in the Kings Creek Silex, which were succeeded by a compact marl typically exhibited immediately west of the Savannah River in the Brier Creek Zone. Extensive beds of silt which are supposed to have been derived from the Mississippi embayment through the Suwanee Straits deposited over this depressed area and gave origin to the Combahee shales, of the Oligocene. Brief interference with silting admitted the formation of the Parachucla marls. Resumed silting continued the formation of the Parachucla shales. This Parachucla group inclines in its faunal relations more to the Miocene than to the Eocene.

The general depression which inaugurated the Miocene period included both the eastern and western areas and afforded their characterizing marls, glauconites, etc. The gradual emergence of the land along the Dorchester Ridge advanced the Miocene shore line seaward and afforded successive phases of Miocene marl, progressively increasing in the percentage of modern life forms.

Lower Eocene.

Black Mingo Shales.—The Black Mingo formation is exposed along the Black River from Brewington Lake in Clarendon County to the mouth of Black Mingo Creek, up which it is exposed to a point between Rhems and the General Marion Bridge. It comprises laminated shales separated by thin layers of very fine micaceous sands, the whole being partly silicified; also a thin layer of marl.

Economic Deposits.—Fullers Earth.

The Lower Eocene in the eastern Tertiary division finds no definite expression below Dewetts Bluff, above which the probable equivalent of the Lower Eocene is, with wide intervals, exhibited near Cains Landing, Mill Creek, at Myers Hill, McCorkle Bluff and at Mars Bluff (base excluded); along the south side of Black Creek it probably returns towards Sumter.

These beds comprise thin laminated shales interstratified with sands, partly indurated and fossiliferous, but not yet definitely discriminated as between the Black Mingo and Congaree phases.

Middle Eocene.

The upper marginal line of the Middle Eocene in South Carolina conforms to the littoral line indicated for the Tertiary. Its tongues, which extend up the underlying Cretaceous ridges, attain the approximate limit of the fall line.

The lower limit of the Middle Eocene, as inferred from the greatly obscured line along which it disappears below the valley lines, extends from the vicinity of Wadboo Creek (Berkeley County), northerly by Hell Hole Swamp, and thence east of Bonneau, whence it curves southwesterly along the Four Hole Ridge to a point near Givhams Ferry (whence the Edisto River channel exposes a tongue of the Warley Hill marl as far south as Sullivan's Bridge). From the point near Givhams Ferry the line probably proceeds westerly by the head waters of the Ashepoo River and thence passes north of Fairfax, whence it proceeds to the Savannah River near Johnson's Landing in Barnwell County, south of the mouth of the Lower Three Runs.

Congaree Shales.—The Congaree phase exhibits its littoral line in Aiken County along Hollow Creek, near the Savannah River, and extends easterly with occasional tongues forming the shore line indicated for the Tertiary. It is delimited on the south by a line extending from the mouth of Hollow Creek (Aiken County) along Tinkers Creek north of Kennedy's Bluff by Binnaker's Bridge (South Fork Edisto River), by Springfield, by Orangeburg, by Jenkins Hill, by Warley Hill, and by Fullers Earth Creek. From this point the formation apparently constitutes narrow bands whose respective lines around the Carolina Ridge and by Catchall and Naked Creek probably follow the littoral line indicated for the Tertiary in the general description.

The materials consist of unconsolidated conglomerates, shales, silicified arkose, chalcedony, bubostone and altered glauconites.

Economic Deposits.—Fuller's earth, marl.

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Warley Hill Phase.—The compact harsh gray-green glauconitic marl of this phase is extensively exposed in the Edisto drainage area, but more characteristically in the Santee area, and quite subordinately in the Savannah area.

In the Santee area, where it is most instructively exhibited, its littoral line extends more northerly than the succeeding Santee marl. In the Savannah area the Santee marl overlaps the shore line of the Warley Hill marl. In the Edisto area the Warley Hill marl constituted a ridge on which the Santee marl feathered to nil.

In the Santee area Warley Hill, on Stouts Creek, affords the type locality, south of which the Warley Hill marl is observed near Weeks Landing (on the Santee River), at Creston, at Cave Hall, on the scarp of the Santee Swamp and at Whaleys Mill on Poplar Creek.

In the Edisto area it is exposed near Orangeburg, and approximately conforming to the low water level of Edisto River from Tuckers Ferry (near Branchville) to Sullivans Bridge (about 14 miles north of Jacksonboro).

The seeming equivalent of the Warley Hill marl is observed in the Savannah area underlying the Santee marl in the bed of Lower Three Runs at Usserys Bluff (Barnwell County), also west of Shell Bluff, Georgia.

The characteristic materials consist of pea-green shales and marls, soft slate-colored shales and harsh, hard glauconitic marls.

Economic Deposits.—Agricultural marls containing potash and phosphoric acid, in useful quantities.

Santee Phase.—The marl of this phase was deposited in two troughs respectively east and west of the Edisto River ridge, or St. Georges anticline.

West of the Edisto River the upper limit of the Santee marl extends from Shell Bluff on the Savannah River to Kennedys scarp on Tinkers Creek beyond which it curves southeasterly to Lemon Swamp near Bamberg; the southerly limit extends from the mouth of Lower Three Runs by Usserys Bluff and thence is obscured, by the oligocene materials, to Lemon Swamp.

East of the Edisto River the upper limit of the Santee marl extends from Jenkins Hill at the head of Lime Creek successively by Bell Broughton (near Creston), Cave Hall and Whaleys Mill (Poplar Creek), to Pinckneys Landing on the Santee River; east of which a small area extends along Potato Creek southerly. From Pinckneys Landing this marl is interruptedly exposed along the west bank of the Santee River to the vicinity of Eutaw Springs, notably in high bluffs at Tates Landing and Vance's Ferry. Near the mouth of Eutaw Creek the littoral line passes to the east of the Santee River and is largely obscured as far as Wittee Lake, where it is again prominently exposed.

The materials of the Santee phase consist of high grade marls of a yellow-white color and compact texture.

Economic Deposits.—Marl adapted to the manufacture of lime and hydraulic cement; agricultural marl.

Barnwell Phase.—The littoral line of the Barnwell phase irregularly overlaps the upper margin of the Santee marls, which extend from Shell Bluff easterly by Tinkers Creek, Orangeburg, Keitt Ravine and thence southerly along the eastern ridge of the Santee River; along some ridges this littoral line extends almost to the fall line.

The area along the Savannah River extends southerly to Johnson's Landing, where it passes under the King's Creek Silex, which near Cohens Bluff passes under the Brier Creek marl (explored on the Georgia side along Brier Creek by Lyell and by Vaughn). From Johnson's Landing the line of the southerly exposures of this formation passes near Fairfax, and thence probably curves, in the obscurity of surface sands, towards Scotchmans Bluff; but it has been conclusively discriminated nowhere near the St. Georges anticline south of Orangeburg.

The materials consist of silicified shells, and decomposed glauconitic sands, partly indurated to sandstone.

Upper Eocene.

Mt. Hope Phase.—Overlying the Santee marls the Mt. Hope marl is exposed along a narrow belt extending from Eutaw Springs by Pond Bluff and Mt. Hope (on the Santee River to a point on the Santee Canal near Pooshee. It consists of a matted mass of the spines of echini, fragments of corals, and a few oyster and other shells (80 to 90 per cent. carbonate of lime).

Ashley-Cooper Phase.—The line which delimits the exposure of the Cooper marls probably starts near the head of Owendaw Creek in the eastern part of Charleston County and proceeds northerly by Hell Hole Swamp and north of Bonneau, where it curves and proceeds along the Four Hole Ridge to the Edisto River. From the Edisto River the margin of the Cooper phase is obscured by

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sands, loams and Oligocene shales. Its southwesterly limit, along which it passes under the Oligocene, is not susceptible of sharply drawn discrimination, but it appears to pass from Givhams Ferry southwesterly to the head of Chechessy Creek (middle branch of Ashepoo River), beyond which it passes below the level of tide, which also affords the approximate southwest limit. The southerly limit of exposure of the Cooper River marl is generally obscured by sands, and by Miocene marls, and by the overlapping margin of the Ashley marl. The easterly marginal line of the Ashley marl probably extends along the westerly slope of the dividing line between the drainage systems of the Cooper and Ashley Rivers. This marl extends along the Ashley River from Bees Ferry to Schultzes Lake. From the Ashley River it passes southwesterly under the Miocene and Oligocene formations. The upper portion of the Ashley-Cooper marls exhibits suggestive Oligocene aspects.

The materials consist of high grade marls, the Ashley or upper portion of which is high in phosphoric acid (15 per cent. calcic phosphate).

Economic Deposits.—Marls for the manufacture of lime and hydraulic cement; agricultural marls.

CHAPTER IV.—OLIGOCENE

King's Creek Silex; Brier Creek Phase; Combahee Phase; Parachucla Phase.

Along the Savannah River this formation is interruptedly exposed, chiefly on the Georgia banks, from Johnson's Landing (S. C.), near the mouth of Lower Three Runs (S. C.), to a point north of Purysburg (S. C.). Proceeding easterly from the Savannah River this formation passes under the sands and clays (as exhibited by borings), and again in part appears along the banks of the Big Salkehatchie River near the Barnwell line (formation extends down river to tide level); it thence extends to the Edisto River below Raysors Bridge, and thence perhaps within the narrow confines of the strait which extended northeasterly.

The southeasterly and southerly line of delimitation extends, greatly obscured, from below Raysors Bridge southerly along the Walterboro ridge, and beyond Ashepoo Ferry; below which the tide level delimits it at Huspa Creek Bridge (near Sheldon) and at Dawsons Landing (Coosawhatchie River), beyond which it proceeds to a point north of Purysburg (Savannah River); and thence to Porters Landing, where the typical Parachucla beds are observed.

The materials comprise King's Creek Silex or silicified marls, Brier Creek marls, lower Combahee shales, Parachucla marls and Parachucla shales.

Economic Deposits.—Shales and marls.

CHAPTER V.—MIOCENE

Marks Head Phase; Edisto Phase; Salkehatchie Phase (?); Goose Creek Phase; Pee Dee Phase; Waccamaw Phase (Mio-Pliocene).

Bounded on the north by a line proceeding from Hudson's Ferry (Savannah River), successively by Raysor's Bridge (Edisto River), Mt. Hope (Santee River), Mayesville (Black River), Sparrow Swamp (Lynches River), Darlington (Black Creek), Hodges Mill (Little Pee Dee), and thence by Little River to the Atlantic Ocean.

The southerly line shows near tide level at the mouth of Little River, and along the Waccamaw River the Mio-Pliocene extends from the State line to Nixon's Landing; a gap thence prevails to the Pee Dee River, near Allison's Ferry, west of which the delimiting line extends successively by Evans Bluff on the Black River, by the head of the Sampit River, along the Wando River, up Goose Creek to Yeaman Hall, across the Charleston Neck by the Cohen place to Accabee Flats on the Ashley River, thence along the Stono River from Wappoo Cut to Cherokee Flats, whence it curves obscured to the Edisto River (at The Dividers); and thence above Ashepoo Ferry it curves southerly by Morgan Island, and thence westerly by Port Royal to Broad River, where it disappears under the ocean. The marls which capped the Parachucla shales near Porter's Landing afford the only observed exposure of the Miocene immediately west of this area.

Marks Head Phase.—The line, assigned to the assumed Dorchester Strait, which extends from Hudson's Landing (above Marks Head, on the Savannah

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River), by Raysor's Bridge, and thence below Mt. Hope (Santee River), northeasterly by Muldrows, by Sparrow Swamp, by Darlington, and thence easterly by Mullins to the Atlantic Ocean, constitutes the northerly limit of the Miocene; and the zone along which the Marks Head (Miocene) soft blue marls probably extend with greatly broken continuity.

Edisto Phase.—Proceeding from the Dorchester Strait southeasterly over the Dorchester Ridge and the upper (ecphora) marls, the Edisto phase is observed in compact yellow-white beds (very high in the content of Calcium Carbonate), which rarely exceed the thickness of three feet. This is the phase of the Miocene which has been phosphatized where favorably situated for the accumulation of the Salkehatchie oozes. This Edisto phase appears circumscribed in the western Tertiary by a line extending from the mouth of the Wando River by Charleston, Church Flats, Port Royal, Parachucla, Givhams Ferry, Bacon's Bridge and thence back to the head of the Wando River. In the eastern division of the Tertiary the sea waves, along Myrtle Beech, cast upon the shores fragments of the equivalent marl, from the bed of the present ocean.

Salkehatchie Phase.—During a phase of gradual land elevation, which probably immediately succeeded the Edisto phase (but as yet with the admitted possibilities of much later origin), the Salkehatchie phase, which comprised a deposit of phosphatic sediments, oozes and glauconites with numerous vertebrate remains, extended over the shoal areas of the Edisto (ecphora Miocene) marls, and contributed to their conversion into the great economic beds of phosphate rock. These deposits also extended over the Oligocene shales along the Salkehatchie and Combahee Rivers, and over the Ashley-Cooper marls along the upper drainage area of the Ashley and Cooper Rivers.

Goose Creek Phase.—During the Miocene time the gulf waters coursing through the Florida archipelago scoured the coast of Carolina along a shore line, a portion of which extended north of the present sites of the Wadmalaw and Stono Rivers to the Cherokee Mines and thence south of Bees Ferry (on the Ashley River), by Yeaman Hall (Goose Creek), and thence along the Cooper River to the Grove, whence it proceeded easterly along the Wando River above Cainhoy. Along this shore line the marl was deeply incised to a comparatively abrupt escarpment along a portion of which the thin marl pertaining to the Goose Creek phase was more prominently deposited. This marl also formed along the southwesterly margin of the embayment of the eastern Tertiary division, where it was succeeded by the Pee Dee phase, which extended over depressed areas as far north as Sparrow Swamp.

In the eastern Tertiary division the Goose Creek type of marl interruptedly appears along the Pee Dee River from Bostick to Allison's Landing underlying the Pee Dee marl.

Pee Dee Phase (Lower).—Probably confined to the Pee Dee area prominently exposed along the westerly bank of the Great Pee Dee River from Myers Landing to Allisons Ferry; subordinately along Lynches River. Exhibited in two layers; the lower layer comprises three feet of a tough, porous yellow marl consisting of a matted mass of shells of chama, congregata, arca, incile, etc.; the upper layer comprises about six feet of a semi-crystalline yellow-white marl, including numerous shells of the pecten eboreus, etc.

Pee Dee Phase (Upper) extends chiefly along the Dorchester Strait and comphises numerous species of the latest miocene shells in a sticky blue matrix.

Waccamaw Phase.—With the close of the Miocene the Carolina Ridge emerged and advanced the shore line of the eastern division of the Tertiary, to the line of Waccamaw River.

This final calcareous phase through which the Miocene yielded to the Pliocene is exhibited along the Waccamaw River and consists of a mass of shells imbedded in granular yellow marl with an aggregate thickness of 12 feet, which rests on the Cretaceous marl (Burches Ferry Phase).

It is apparently a transition phase comprising many of the characteristic forms of both the Miocene and Pliocene.

CHAPTER VI.—PLEISTOCENE

Fresh Water.	*Marine.*
CHERAW (LAFAYETTE) PHASE.	WADMALAW SHELL MARL.
LAFAYETTE SANDS.	BOHICKET MARL SANDS.
LAFAYETTE COBBLES.	ACCABEE GRAVELS.
HAMPTON CLAYS.	
TEN MILE SANDS.	

The formation designated the Cheraw Cobbles, the equivalent of the Lafayette, has been variously assigned to the Pliocene and to the Pleistocene. It has

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apparently resulted from vast fresh-water floods which extended over a great flat, constituted by the median three-fifths of the Coastal Plain, the character of whose waters excluded life forms from its deposits. These waters also extended up the greater valleys to the foot of the Blue Ridge Mountains.

The inauguration of the great floods is marked in favored places by the survival of enormous deposits of more or less stratified sands, which followed the shore line as it retreated inland; then appear the cobbles and pebbles, which were deposited high on the scarps of the inclosing ridges of the Savannah, the Congaree, the Wateree and the Great Pee Dee Rivers, along their courses from the mountains to and beyond the fall line. But let it be carefully observed that there are no marginal beds of cobbles along either the Edisto or Black Rivers, whose waters originated in the Coastal Plain.

Coarse sands, Lafayette cobbles and the Lafayette red sands, and then the mottled red and white and yellow clays, all successively followed the extension of the shore line up the Coastal Plain ridges which confined the flood streams.

In the quiet waters, remote from the inner or fresh-water shore line, the fine argillaceous silts deposited to form the white clays of the Hampton type, in favored localities, which constituted a broken belt extending from Garnet by Walterboro, by Summerville and thence easterly. While in the western area the Hampton clays occur chiefly along a high ridge (60 to 100 feet M. L. T.) the eastern area affords somewhat similar matter, but as third bottoms, and in depressed basins on the plateaus, at approximately corresponding elevations.

Closely identified with the white clay a more extensive mantle of clay, mottled in highly contrasting pink, red, white and yellow designs, is substantially co-extensive with the Lafayette series south of the littoral line; it roughly conforms to the pre-established topographic irregularities. Its extent may be observed from a point near Jamisons in Orangeburg County to Ladsons in Berkeley County, a distance of approximately 69 miles. At this stage it is probable that the Marine Pleistocene beds were forming along the ocean beaches.

While these white clays accumulated in good bodies in elevated spots, along a favored zone, the argillaceous silts which were deposited more southerly appear in places interbedded in thin seams with fine vari-colored sands, aggregating from 20 to 40 feet in thickness. This appears to have been associated with the formation of an outer reef, barrier, or ridge, designated the Ten Mile sands, on the seaward slope of which the Marine Pleistocene deposited. The Ten Mile sands include a capping of reddish loam, which probably represented the terminal expression of the Hampton red clays. Very fine grained pure white eolean sands accumulated over the Ten Mile sands.

Economic Deposits.—The Fresh Water Pleistocene beds afford: Brick clays, clays for plating sand roadbeds, cobbles, cement gravel, sands adapted to the manufacture of sand-brick.

MARINE PLEISTOCENE.

Wadmalaw Shell-Marl. Bohicket Marl Sand. Accabee Gravels.

Wadmalaw Shell-Marl.—Immediately overlying the Edisto marl (upper ecphora Miocene), which, in the localities where phosphatized, constitutes the great economic body of phosphate rock, there occurs a bed of loosely matted post-Pliocene shells varying from nil to four feet in thickness. This phase is exhibited south of Bees Ferry, at the Faber place, and along the northerly shore of the Stono and Wadmalaw inland waterway, at the Cherokee, Bolton and St. Andrews phosphate mines, and at the base of Simmons Bluff; also in sundry depressions on Edisto Island.

Economic Deposits.—Shell beds afford good source of supply for agricultural marl.

Bohicket Marl Sand.—Immediately overlying the Wadmalaw marls and extending over the Wadmalaw shell-marl into which it grades, there occurs a bed of exceedingly fine grained sands about five feet thick. However, it overlaps the typical Wadmalaw shell-marl and extends over a great portion of the phosphate rock area as far north as Ten Mile Hill.

The color is rendered gray-green and yellow-red, probably by fine glauconitic inclusions, portions of which have been more or less weathered with the effect of rendering the mass semi-plastic with residual clay; the iron has in part leached out, and cemented, to "hard pan," a thin portion of the material immediately above the phosphate rock.

Accabee Gravels.—Resting on the Bohicket marl sands a bed of coarse gravel (¼ inch diameter) occurs, and embraces rounded lumps of phosphate rock and numerous quartz pebbles (2″); its littoral line overlaps, and extends more

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northerly than, the Bohicket marl-sand. Along its northerly exposures it attains the elevation of 16 feet (M. L. T.). This bed, which is generally missing, attains in places the thickness of four feet; it affords the irregular seam of phosphate rock known to the miners as "flying rock."

Economic Deposits.—Affords in places limited supplies of phosphate rock.

DIVISION III.—ECONOMIC AND INDUSTRIAL

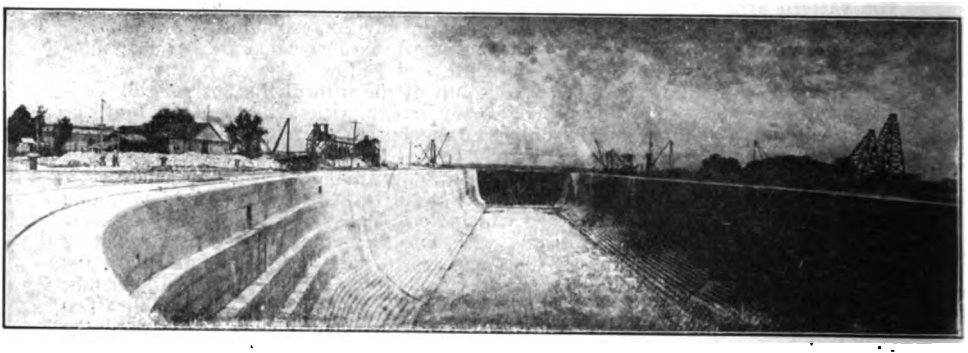
PART I.—STRUCTURAL MATERIALS

GRANITES.

GRANITOID ROCKS.

GRANITE. GNEISS.
GRANITE-GNEISS. GNEISSOID SLATES.

South Carolina exhibits bodies of granitoid rocks respectively comprising Biotite Granite, Muscovite Granite, Augite Granite, Protogene Granite, Hornblende Granite, Syenite and the various intermediate forms which depend upon various combinations of the characterizing accessory minerals above indicated.



U. S. GOVERNMENT DRY DOCK AT NAVAL STATION AT CHARLESTON, CONSTRUCTED OF WINNSBORO GRANITE.

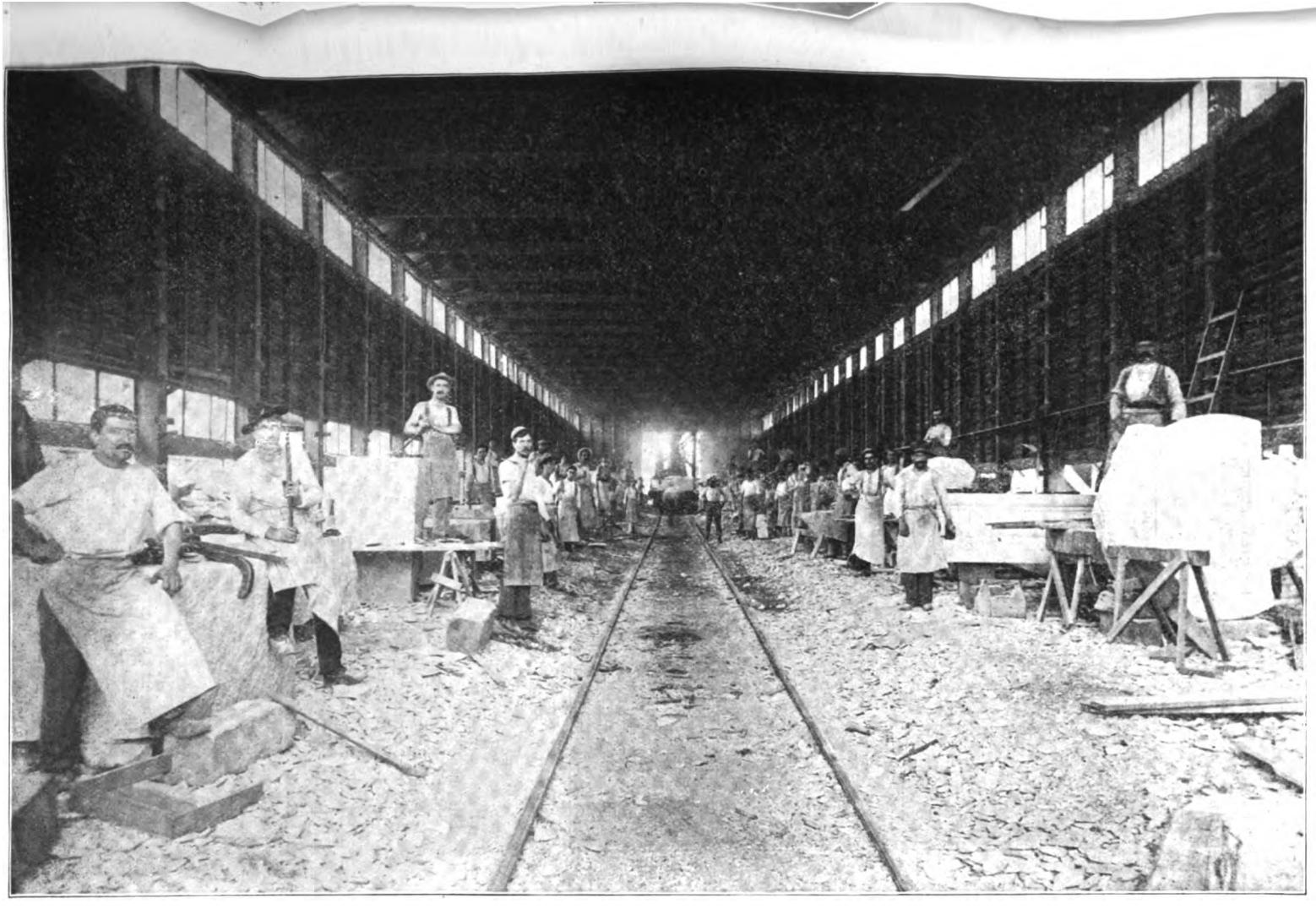
The prevailing prejudice against the term gneiss exacts brief notice in connection with the usage of the word in this report. The gneisses in the respect of both chemical and essential mineral composition are similar to the granites and they are similarly qualified, in part, by the corresponding characterizing accessory minerals; thus we may have biotite gneiss, muscovite gneiss, muscovite-bearing biotite gneiss, hornblende gneiss, protogene gneiss, etc. The distinction between gneiss and granite is in the main structural or petrographic; the minerals in the gneissoid rocks exhibit a parallel or dimensional arrangement, frequently so obscured as to require the microscope for discrimination. In many instances the distinction, otherwise obscure, may be afforded by the bedded character which distinguishes gneissoids of sedimentary origin which occur in stratified layers. But, while the granites of intrusive origin were all massive and unstratified, metamorphic action has long affected portions of the older granites and thereby caused a parallelism in the arrangement of the component minerals, which gives origin to the term granite-gneiss as employed in this report. Frequently the same bed will exhibit both granite-gneiss and typical granite structure, by reason of differential metamorphic action.

In South Carolina the granites rank first, the granite-gneisses second, and the stratified gneisses third, in the scale of superiority exacted by the industrial arts; in estimating the worth of a bed of stone the fact that granite-gneiss constitutes the surface rock does not necessarily imply that other available parts of the same bed may not represent a superior granite.

The oldest granitoid rocks of prominence are successively exhibited in the Anderson-Spartanburg, Chatooga, Tunnell Hill, Saluda and Tyger Zones. Enormous bodies of granite-gneisses and granites occur in the Saluda Zone.

The younger granites, which were extruded from the earth's interior, and in many instances effused over the previously prevailing rock of the country, have not been subjected to the metamorphosing influences which affected the older

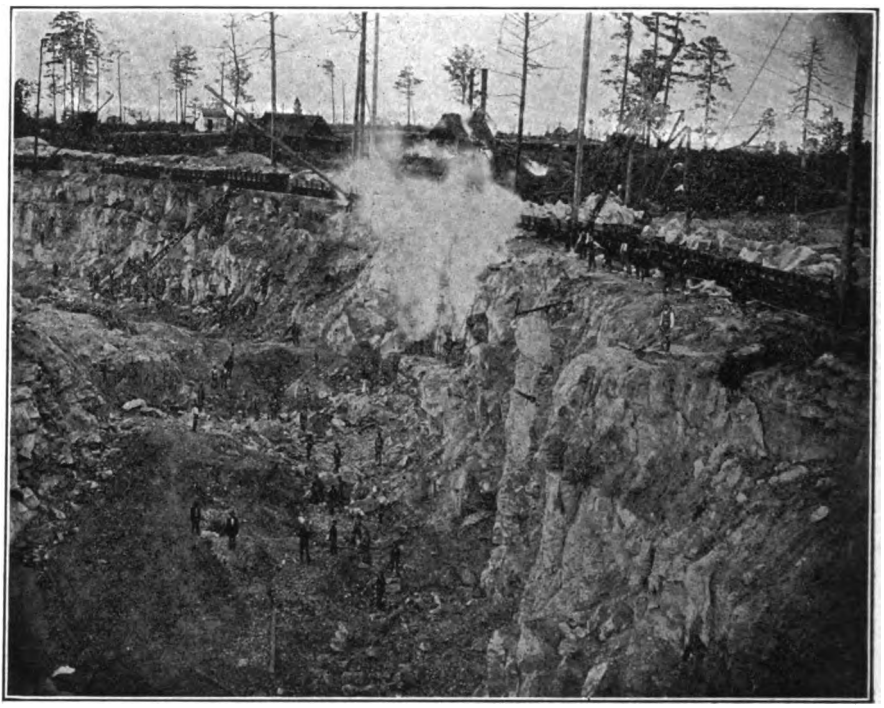
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FINISHING SHED, WINNSBORO GRANITE CO.

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granites. They comprise the great commercial beds of South Carolina granite which are so conspicuously developed in the Abbeville-York Zone, notably near Winnsboro.



GRANITE QUARRY OPPOSITE COLUMBIA.

List of Granite Quarries Regularly Operated.

Survey No.	Quarry.	Address.
1635	Beverly Quarry	Beverly, S. C.
2250	Edgefield Quarry	Edgefield, S. C.
5265	High Point Quarry	High Point, S. C.
5574	Leitzsey Quarry	Newberry, S. C.
5650	Entrekin Quarry	Graycourt, S. C.
6597	Lipscomb Quarry	Columbia, S. C.
6688	Winnsboro Granite Co. Quarry	Rockton, S. C.
6740	Winnsboro Granite Co. Quarry	Rockton, S. C.
7355	Excelsior Granite Co. Quarry	Heath Springs, S. C.

List of Granite Quarries Intermittently Operated.

1096	Westminster Quarry	Westminster, S. C.
1306	Shelor Quarry	Walhalla, S. C.
1335	Pendleton Quarry	Pendleton, S. C.
1872	Bordeaux Quarry	Bordeaux, S. C.
5195	Benjamin Quarry	Quarry, S. C.
5203	Bauman Quarry	Greenville, S. C.
5482	Bates Quarry	Batesburg, S. C.
6075	Keystone Quarry	Spartanburg, S. C.
6078	Johnson Quarry	Pacolet, S. C.
6520	Blairs Quarry	Blairs, S. C.

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Survey No.	Quarry.	Address.
6530	Strothers Quarry	Strothers, S. C.
6605	Bowling Green Quarry	Bowling Green, S. C
6615	Whitesides Quarry	Yorkville, S. C.
6626	Happerfield Quarry	Yorkville, S. C.
6690	Leiper Davis Quarry	Columbia, S. C.
7645	Oro Quarry	Chesterfield, S. C.

For descriptions of the individual properties see "A Catalogue of the Mineral Localities of South Carolina."

LIMESTONE-DOLOMITE-MARBLE.

Beds of these stones occur in the Chauga, Poor Mountain and Cherokee Zones.

The Chauga Zone affords strata of blue limestone separated by black slates (Sur. Nos. 1065, 1070, 1410); quarried to supply lime prior to 1850; no quarries are in operation.

The Poor Mountain Zone exhibits a bed of very white coarse grained dolomitic marble, attaining in some places the thickness of 30 feet (Sur. Nos. 1300, 1302, 1425).

The Cherokee Zone presents successive beds of blue limestone interstratified with hornblende slates (Sur. Nos. 6223, 6335), and a more recent bed of thick blue limestone capped with a white dolomitic marble (Sur. No. 6129).

In the upper blue stone dynamo-metamorphism has constrained a dimensional arrangement of the particles of limestone, which structure determines planes of rift parallel to the bedding.

The upper phase (marble) of this zone apparently extends interruptedly from Cherokee County through Union and Laurens Counties (Sur. Nos. 5675, 5240, 5189, 5187).

In Cherokee County the limestone has been quarried to a depth of 75 feet at the quarry of the Limestone Springs Lime Works (Sur. No. 6129), in connection with which four large continuous kilns are operated with an annual output of approximately 100,000 barrels of lime.

Two small kilns are intermittently operated north of Blacksburg, respectively at the Ettres (Sur. No. 6410) and the Hardin (Sur. No. 6413)) quarries. *For descriptions of the individual properties see "A Catalogue of the Mineral Localities of South Carolina."*

MARBLE.

Uses of Marble (and Limestone).

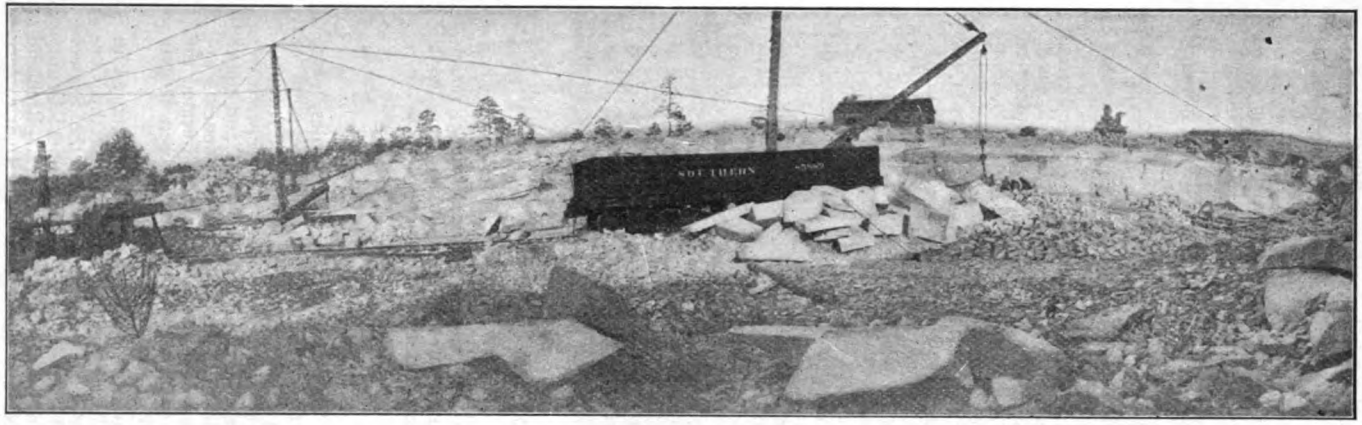
Monumental, statuary, general decorative and refined structural work; manufacture of lime, and hydraulic cements; manufacture of carbonic acid gas; whiting; flux in various smelting processes; agricultural adjunct; road metal.

SLATES, SCHISTS, "SHALES."

Geographic Limits.—A broad belt of "clay slates," schists, "shales," etc., extends along the fall line from the North Carolina line (near the point of entrance of the Pee Dee River) to the Savannah River above North Augusta. It comprises portions of Chesterfield, lower Lancaster, upper Kershaw, lower Fairfield, upper Richland, upper Lexington, lower Saluda, Edgefield and upper Aiken counties. The average width of this Edgefield-Chesterfield Zone is approximately 18 miles. Granite and other igneous intrusions have obliterated the slates in many parts of this area, while some other parts have been largely obscured by the overlapping Coastal Plain sands.

Good bodies of these slates, of value to the brick industry, are exposed in Chesterfield County along the scarps of Little Westfield Creek (near the Cheraw-Hamlet Railway), also near Chesterfield, near Ruby, and near the Brewer Gold Mine; in Lancaster County near the Haile Gold Mine; in Fairfield County along Sawneys Creek; in Kershaw County along Rice Creek; in Richland County along Crane Creek, along Gill's Creek and along the Broad River eastern scarp; in Lexington County along the Dutch Fork; in Saluda County near the Culbreath Mine; in Edgefield County along Turkey Creek and Stevens Creek, notably near Plum Branch, and near the confluence of the Savannah River.

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THE RION QUARRY—GRAY GRANITE.



THE ANDERSON QUARRY—BLUE GRANITE.

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Physiography and Geognosy.—The Edgefield-Chesterfield slates do not represent true shales such as are typified by the sedimentary beds of the Carboniferous, which are so extensively utilized in the manufacture of paving materials. Their origin involved an inverted process. The true Carboniferous shales represent sediments deposited by large bodies of water and subsequently partly indurated by heat and pressure. The Edgefield-Chesterfield slates, on the other hand, represent a vast mass of igneous porphyries, of very much greater age, which have been subjected to strains which have produced the slaty cleavage which characterizes these rocks; they still retain some of the original igneous forms of mineral.

This material is dark gray in color, breaks in rhomboidal blocks, and is moderately hard. See analyses Sur. Nos. 7527, 7550(a) and 7550(b). It burns to a gray-black vitreous body (between 1,800° and 2,000° F.), which is very dense and smooth.

Meta-Chemic changes near the surface have modified the composition of many of the slates and enabled them to incorporate water of crystallization, and induced a softer physical condition, which has rendered them more subject to the disintegrating effects of weathering forces. The result of these changes has afforded a material which in chemical composition is for practical purposes similar to shales. A prominent belt of such material comprises pale, dirty green slates occasionally observed weathered to brown, red and yellow colors. (See Table of Analyses of Edgefield-Chesterfield Slates, Sur. Nos. 2280, 7665, 7735). These shales afford: Specific gravity 2.8, plasticity 20 to 30, tensile strength 30 to 40 pounds. They burn to a dense vitrified body at a temperature varying, with the character of the slate, at from 1,900° to 2,100° F.

Within each side of the Edgefield-Chesterfield Zone occurs a marginal body of highly siliceous matter, which probably represents volcanic tuffs, now altered to a soft unctuous mass of extremely fine texture. Tongues of this material invade the main body of the slates. (See Table of Analyses of Edgefield-Chesterfield Slates, Sur. No. 7550.)

Economic.—The slates of the Edgefield-Chesterfield Zone afford some fair grades of flagstone, and some fairly good beds of roofing slate; the latter in Fairfield County, near the Lamar Mine, and in Edgefield County along Stevens Creek.

The greatest value of these slates is recognized in the excellence of the material which they offer for vitrified wares, such as paving brick, sewer-pipe, etc. In many places, however, disseminated grains of pyrite destroy the value of these slates.

SEWER-PIPE OR VITRIFIED BRICK MATERIALS.

The following are the approximate limits of the constituents required of these clays, as determined by analyses of the materials successfully used in the manufacture of vitrified wares:

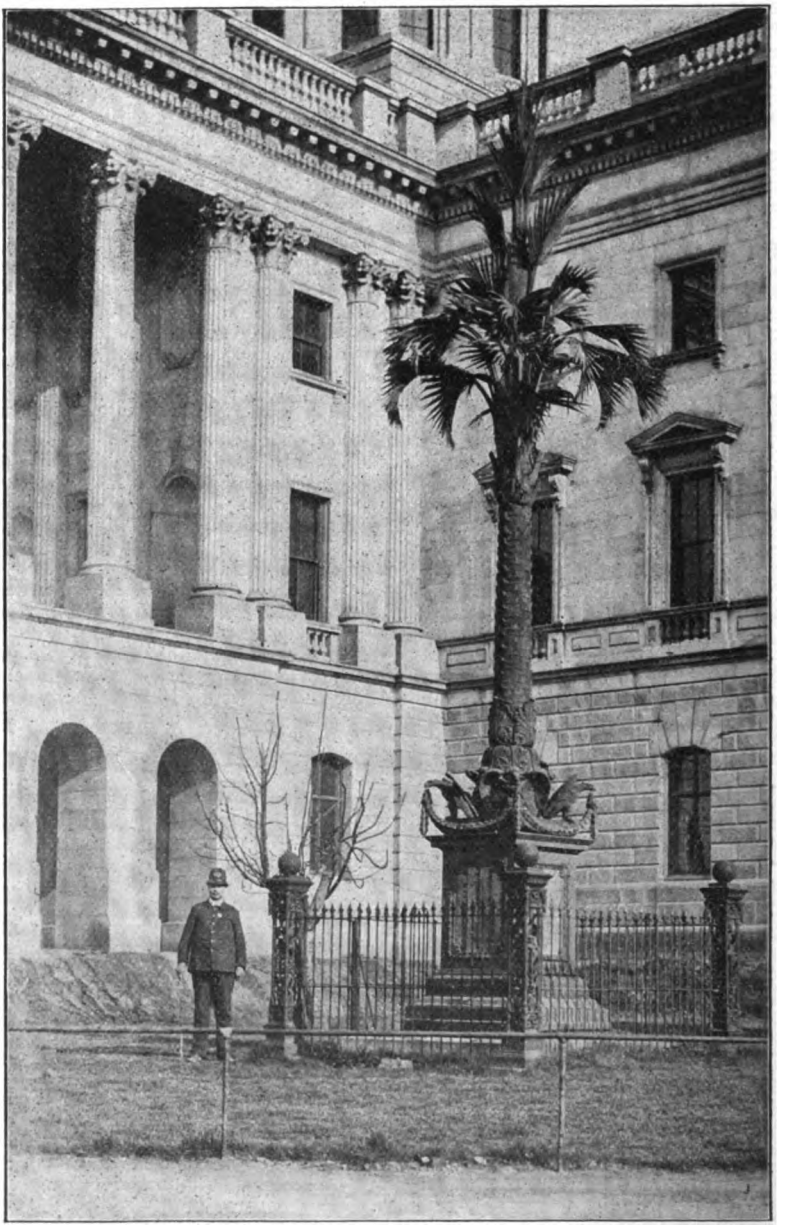
Clay base—45 to 60 per cent., with an average 52 per cent.
Quartz impurities—20 to 45 per cent., with an average 13 per cent.
Fluxing impurities—8 to 20 per cent., with an average 13 per cent.

It is observed that they are lower in the scale of fusibility than the potter's clays, between which and the tile or brick clays they constitute a connecting link. The clay body for the required wares has been heretofore derived from shales or from recent deposits of alluvial pipe clays, or, more ordinarily, from a mixture of the two. The shales ordinarily employed approximately conform to the limits above indicated.

The principal difficulty restricting the use of shales alone is found in the expenditure of power necessary to reduce them to such a degree of fineness as develops the proper plasticity, where the minimum tensile strength should exceed fifty pounds; it has been found more expedient to incorporate with the coarse ground shale a plastic clay, of high tensile strength. A very serious difficulty results from the small margin between the points of vitrification and viscosity, endangering over-burning to the prejudice of strength, shape and color. There should be a margin of 145° F., or more, between these points. This, however, is rarely realized, and it becomes necessary to mix with these shales a clay of a different degree of fusibility, such as a high grade pipe clay or a fire clay, so as to increase this margin. Clays thus required to be mixed with shales are approximately represented within the following limits of composition:

Clay base	40 to 65 per cent.
Quartz impurities	20 to 55 per cent.
Fluxing impurities	4 to 10 per cent.

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MONOLITH COLUMNS—22 TONS EACH. SOUTH CAROLINA GRANITE.

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The combined tensile strength consistent with best practice should not be less than fifty pounds to the square inch, although some clays are worked of inferior strength.

The dry shale is first ground in a dry pan machine to a degree of fineness varying from 1-16- to 3-32-inch mesh. After screening it is mixed with clay in the proportion of about 3 to 1 (varying with character of clay, etc.), and the mixture is tempered in a horizontal pugging mill; whence it passes through the usual process of molding, repressing and drying; the burning is ordinarily effected in a down-draft kiln at temperatures varying with the requirements of the material from 1,700° F. to 2,000° F.

Vitrified wares are sometimes salt glazed; the clays in such cases should have sufficient silica to ensure uniform combination over the entire surface, with the sodium of common salt.

It is to be noted that shales are accredited with much larger proportions of fluxing impurities than they respond to, in their fusion points. Iron oxide ordinarily constitutes exceeding half of these impurities, and it possibly occurs in the form of fine, hard grains of magnetite, or hematite, which are probably not readily affected by the solvent action of slightly vitrified slags. Grains of iron sulphide are objectionable by reason of the blistering action of the sulphuric anhydride and sulphurous acid formed at higher temperatures and through the formation of blotches incident to the action of the vitreous matrix on the porous oxides at these temperatures. The sulphates of the alkaline earths are also objectionable on account of their blistering effects at high temperatures, the sulphuric anhydride becoming disassociated.

Properly vitrified wares should not absorb more than two per cent. of their weight in water, after an immersion of twenty-four hours, as otherwise they become subject to the dangers of freezing. They should furthermore be able to resist a crushing strain of not less than eight thousand pounds to the square inch, in order to insure proper toughness and strength. A brick vitrified to a glassy texture, or with a glazed surface, is objected to as a paving brick, by reason of its slippery surface. The extreme loss of weight by the attrition of the rattling test should not exceed twelve per cent.

COPIES OF ANALYSES (OHIO GEOL. SURVEY, VOL. VII, P. 133).

Shales and Shale-Clay Mixtures used in the manufacture of paving materials in Ohio:

Elements.	1 Shale.	2 Shale and Clay Mixture.	3 Shale.	4 Shale and Clay Mixt.
Lime	.29	.43	.44	.62
Magnesia	1.22	.77	1.57	.98
Alumina	21.06	24.34	20.89	22.47
Oxide of Iron	7.54	6.11	5.78	5.63
Soda	.39	.09	.34	.42
Potash	3.27	3.00	4.68	3.08
Silica	57.45	55.60	58.38	58.20
Water (comb)	5.90	6.75	7.53	6.15
Moisture	1.90	2.65	.....	1.65
Total	99.02	99.74	99.61	99.20

No. 1—Shale from the Ohio Paving Company, Columbus, Ohio, mined at Darlington, Ohio, on Lower Kittanning Horizon. Average sample (Lord, Chemist).

No. 2—Shale and Fire Clay Mixture, from the A. O. Jones Company, Zanesville, from the Kittanning Horizon. (Lord, Chemist.)

No. 3—Shales from Columbus Sewer Pipe Company, from Huron Shale Horizon. Average sample. (Macpherson, Chemist.)

No. 4—Shales and Fire Clays mixed, from the T. B. Townsend Brick Company, Zanesville. Freeport Shales and Kittanning. Fire Clays. (Lord, Chemist.)

QUARTZ.

Some of the veins of barren quartz which are variably distributed throughout the crystalline area present very large bodies of pure silica. In some cases these quartz bodies constitute local phases of pegmatite intrusions, whose extensions

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vary through micaceous to feldspathic; others represent deposits from solution, segregations, etc.

Large veins of quartz occur at many localities, notably near Saluda Old Town (Sur. No. 5440); Ridgeway (Sur. No. 6755); Kings Creek (Sur. No. 6463).

Uses of Quartz.

Reduced to a fine state of subdivision, pure quartz, or "flint," is used in the manufacture of pottery and glass; also as a low grade abrasive and polishing material. Lump quartz is used as a packing for Glover Acid Towers.

ROAD BUILDING MATERIALS

Road-Bed Material—Road-Dressing Material.

The materials in South Carolina which are suited for road metal consist of trap, granite, gneiss, limestone, slate, novaculite (chert), cobblestones and gravels; Tertiary clays and marls afford valuable cements for plating sand roads.

Trap and Other Igneous Dikes.

The great toughness of these rocks, which renders them valuable for road metal, imposes such high cost in quarrying and crushing as to have prohibited their general use.

The highly basic traps or amphibolites are subject to the objection of weathering more readily than the more siliceous diorites.

These rocks occur most extensively distributed through the Abbeville-York Zone and subordinately in all other zones of the Crystalline area.

Granite and Gneiss.

Granite and gneiss constitute the most generally distributed and one of the best roadbed materials in the Crystalline area. The varieties containing the greater amounts of quartz (free silica) generally constitute the better road metal, the highly feldspathic and micaceous varieties being more subject to weathering influences. Granites and gneisses suitable for road material occur more or less abundantly exposed by the streams north of the Edgefield-Chesterfield Zone, and subordinately in the Vaucluse Zone. (See Granite Division.)

Limestone.

This rock constituted the "pioneer" material in the "macadamizing" of roads. The ease with which it is reduced to a dust which forms a sticky mud has largely caused its displacement as a top dressing; however, it constitutes fine material for a roadbed, but should be top dressed with chert.

Limestone occurs in Oconee, Cherokee, Union and Laurens Counties. (See Limestone Division.)

Slates and Shales.

The more siliceous and sandy shales or slates constitute a very fair grade of road metal; they pack hard and wear well. On the other hand, the varieties high in alumina weather to a clayey mass; they are best adapted to sand roads.

Slates constitute the main body of the Edgefield-Chesterfield Zone, which extends from the Savannah River to the North Carolina line, where the Pee Dee River enters South Carolina. These slates border the "Sand Hill" region, along which they could be utilized to great advantage.

Novaculite—"Chert."

Bodies of novaculite consisting of quartz and feldspar afford considerable variation in the proportion of these minerals. The highly siliceous varieties represent one of the best roadbed and road-dressing materials observed in South Carolina; they afford compact, hard roadways comparatively free from dust and mud. The highly feldspathic varieties respond more freely to weathering influences with the attendant disadvantages of dust or mud.

The novaculites constitute a very extensive series of rocks throughout the Abbeville-York Zone; the greater number of observed exposures represent the more highly feldspathic varieties.

COBBLESTONE AND CEMENT GRAVELS.

The Lafayette cobbles and pebbles afford respectively the best roadbed and road-dressing materials available in this State. They constitute a marginal fringe to the scarps of the greater streams in the Crystalline area, and appear in beds covering broad plateaus where these streams penetrate the coastal plain. The latter area affords beds of great economic importance on the high plateaus of the Pee Dee near Cheraw; along the scarp delimiting the basin at the confluence of the Wateree and Congaree rivers, notably along the line of the Garners Ferry road from Columbia; along the high ridge, on the east of the Savannah River, interruptedly from North Augusta to Luray.

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The cement gravels, which represent Lafayette pebbles which were scoured down from the high scarps and deposited with clay in the valleys, during the Columbia phase, occur as a capping to the "second bottoms" of the Savannah River near Beach Island, and thence interruptedly to the mouth of Lower Three Runs; they also appear in beds of economic importance immediately south of Camden.

For roads across the sands and sandy-loams of the coastal plain, Lafayette, Eocene, or Pleistocene clays are mixed with sands in the proportion of 6 to 4 and applied in a layer about ten inches thick; the clays high in the content of iron afford the best results. The soft upper Eocene marls which abound in Charleston and Berkeley counties also constitute an excellent binding material for sand roads.

The very hard crystalline marl of the Mt. Hope phase exposed along the Santee River should afford a good grade of metal for roadbeds.

SAND.

SAND-BRICK SAND; MOLDING SAND; BUILDING SAND.

Crystalline Area.—In the Crystalline area important deposits of sand are found mainly in the beds of streams, and along such associate flats as are subject to overflow by storm currents; these sands are suitable for the manufacture of sand brick, and for mixing mortar and cement.

Some extensive bodies of fine grained sand represent disintegrated sericite schists and itacolumites; some bodies of this material afford a good molding sand. This material occurs in the Cherokee Zone; along the upper part of the Abbeville-York Zone; along the Edgefield-Chesterfield Zone.

Analysis: Lime, 0.60 per cent.; Magnesia, 0.50 per cent.; Alumina, 5.70 per cent.; Soda and Potash, 0.80 per cent.; Iron Oxide, 6.80 per cent.; Silica, 80.00 per cent.; Moisture, 0.60 per cent.; Ignition, 5.00 per cent.; Total, 100.00 per cent.

PART II.—CRYSTALLINE REGION

NON-METALLIC GROUP

SERPENTINE, SOAPSTONE (STEATITE).

These successive products of alteration of magnesian rocks occur variably distributed over the crystalline region from the fall line to the mountain-tops, wherever the magnesian eruptive rocks have been extruded, and exposed to appropriate metamorphic influences.

A great number of these bodies appear to have resulted from the alteration of pyroxenite. In the Chatooga and Saluda Zones alteration of the peridotes affords the main occurrences of soapstone, of which some masses have graded to chlorite schist. (Sur. No. 1517 and others.)

The alteration of pyroxenite through amphibolite to serpentine and soapstone has afforded the prevailing number of bodies of soapstone, notably in the Abbeville-York Zone, where extensive masses occur (Sur. No. 1856 and others). In many cases the alteration has been largely confined to the superficial parts of the rock body; in others the change has extended deep, and over areas of several acres.

The quarrying of these materials in South Carolina has been confined to supplying neighborhood domestic uses.

Uses of Serpentine, Soapstone, Talc.

For decorative purposes; variety denominated "verde antique" is in good demand, especially for interior artistic purposes.

A gray variety is extensively worked into electric switchboards, washtubs, sinks, table slabs, etc.

The bulk of this material is ground to a fine pulp and utilized as a sizing for wood-pulp papers; also used in the manufacture of wall plasters, paint, and a special marine paint, for the hulls of vessels, for which it is said to afford excellent protection. The pulp is used as an adulterant in soap.

The commoner grades of soapstone are used for furnace and stove linings, bed-warmers, etc.

The fine white grades, designated talc, are used in the manufacture of toilet powders, shoe powders, slate pencils, crayons, tailors' chalk, gas tips, and as a sizing for the finer grades of paper.

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ASBESTOS.

This mineral occurs at several localities in the Saluda, Anderson-Spartanburg, and Abbeville-York Zones. It appears associated with chlorite schists, talc schists, steatite and serpentine, all of which represent alteration products of the peridotes, pyroxenite and other magnesian silicates, both foliated and undeformed.

The asbestos, frequently with the composition of crysotile, extends its bunches of crystal fibers from wall to wall of the numerous small fissures (rarely exceeding 8 inches in diameter) in the compact magnesian rocks; the separation of which in mining imposes burdensome cost. Intense metamorphism in some instances has resolved the original magnesian rock to chlorite schist, magnetite, and large clustered masses of true asbestos, with lustrous long white fibers. (See Iron, Sur. Nos. 6340-6342.) Asbestos (including false) occurs in Pickens, Spartanburg, Cherokee, Anderson and Newberry counties. (Sur. Nos. 1368(?), 1522, 1570, 1610, 5430, 5667, 5892.)

In some cases asbestos appears to have resulted from metasomatic action, in others from aqueo-igneous segregation. The metasomatic asbestos veins do not appear to extend to great depths. Asbestos is not mined in South Carolina.

In the undeformed rocks the asbestos is obviously the junior in origin; where the asbestos occurs undeformed in rocks that are deformed the asbestos is not necessarily junior to the period of deformation, because the forces which created foliation probably operated to irregularly crystallize the asbestos, which often appears in an intermediate uncrystallized form, which grades to the fibrous crystal; the intermediate amorphous condition of the asbestos probably represents the result of aqueo-igneous action prior to the exercise of the forces which deformed the associate rock.

For descriptions of the individual properties see "A Catalogue of the Mineral Localities of South Carolina."

Uses of Asbestos.

Sectional covering for boilers, steam pipes, hot water pipes and gas engine pipes; packing for steam and gas engines; lining for furnaces and gas stoves; general heat and electric insulation; fireproof cloth; fireproofing for buildings, safes and roofing. Improper sizing for silks. In the manufacture of asbestos leather and asbestolith.

BARYTES.

The occurrence of this mineral appears along the Kings Mountain Range in the Abbeville-York Zone, where the rock formations have been greatly foliated and more or less deformed. The barytes appears to have been deposited from solution in the fissures of hard mica schists, now weathered above the valley line to the unctuous hydromica form.

A sample of good grade of barytes from the vicinity of Rossville in Chester County has been examined; but the character of the deposit is as yet unknown.

For descriptions of the individual properties see "A Catalogue of the Mineral Localities in South Carolina."

Uses of Barytes.

Used as a substitute for white lead or zinc oxide in paints; but frequently as an adulterant.

As a legitimate pigment the best form is "Blanc-fixe" (artificial barium sulphate).

Special pigment known as Lithophone, consisting of barium sulphate, 68 per cent.; zinc sulphide, 24.85 per cent.; zinc oxide, 7.28 per cent.

As an adulterant in putty.

For sizing paper, and affording undue weight to same.

Used as an enamel in the ceramic arts; especially in connection with the "jasper-ware."

To a limited extent in pyrotechny.

Affords basis of several laboratory reagents.

MONAZITE.

Geographic Limits.—While some occurrences of monazite appear in the zones northwest and southeast of the Anderson-Spartanburg Zone, the great economic monazite belt occurs in the latter.

The northwesterly limit of this belt extends southwesterly from a point on the North Carolina line near the Islandton Ford road; with a highly irregular line it extends south of Greers, south of Roper Mountain, and proceeds thence

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near and beyond Piedmont southwesterly. The southeasterly limit begins at the North Carolina line, near Bowens River, and extends southwesterly along Bowens River Valley to Nesbitts Island, and thence to a point three miles north of Gaffney, whence it proceeds successively by Spartanburg, Simpsonville, and south of Pelzer, to and along the headwaters of Rocky River.

A subordinate parallel belt is suggested by widely separated occurrences of monazite on the South Carolina branches of Crowders Creek (York County), on Walnut Creek near Wares Shoals (information), and one mile east of Donalds on a branch flowing to the Saluda River; also at Honea Path.

Sands containing a little monazite have also been received from the Saluda Zone, near Walhalla.

Physiography and Geognosy.—The extreme width of the main belt, viewed in the light of heretofore recognized deposits, varies from ten miles in Cherokee County to five miles near the Greenville-Anderson line; southwest of which it proceeds diminishing in width and in the number of economic deposits. It must not be conceived that this extreme width represents an unbroken area of monazite formations.

The rocks in which the monazite and cerium minerals appear to have formed consist of groups or irregularly repeated series of pegmatite bodies (var. orthoclase-quartz) with some mica, intimately associated with dark graphite (?) schists of extremely fine texture, mica schists, aplite gneiss, and other gneissoids, including in some localities hornblende slates; each group represents one of a roughly parallel series. These groups in South Carolina occupy remotely successive belts; thus one prominent group occurs southeast and another northwest of the Thicketty anticline.

The monazite occurs principally in the pegmatite mass as small crystals and grains imbedded in the clear feldspar and as intergrowths with the mica (both biotite and muscovite); the pegmatite mass exhibits a distinct development of crystalline graphite, and furthermore exhibits in some specimens an interbanded distribution of accessory minerals with thin pegmatite, probably of aqueo-igneous origin. The more conspicuous primary minerals associated with monazite in this State are magnetite, ilmenite, tourmaline, zircon, corundum, rutile and beryl; The secondary minerals comprise an abundance of garnets and epidote and occasionally staurolite. Under the protracted process of weathering, degradation and erosion the monazite-bearing rocks have been disintegrated, and while the softer and lighter materials have been separated and removed in suspension by water, the harder and heavier minerals have been scoured into the beds of streams and into the neighboring valley depressions, and there accumulated as wide gravel beds. These gravel beds were subsequently covered with a variable overburden, portions of which irregularly contain small quantities of monazite.

When the monazite gravel beds were formed the conditions differed widely from such as now prevail; violent rain storms appear to have continuously denuded the rocks of their surficial, loose and soil-forming parts; and flowing water appears to have at least occasionally prevailed in wide sheets in each valley. By these joint agencies the lighter products of erosion were borne far away while the gravel monazite and other heavy minerals accumulated to mark the former water beds.

With a full supply of water a placer deposit which will afford a pound of monazite from a barrow-load of gravel is considered a "good proposition," provided the overburden is nominal. The depth of overburden permissible within the limits of profitable work varies with the thickness and richness of the underlying monazite gravels; the latter will rarely average twelve inches in thickness, ordinarily much less.

Monazite deposits are mined along the belt north of Gaffney; along the belt west of Thicketty Mountain; most actively along the belt in Greenville County extending from Gilders Creek southwesterly by Mauldin to Anderson County. In this latter area a modified Wilfley table is utilized to great advantage in concentrating the monazite sands; in all other sections the primitive screened-head sluice box is still in use for this purpose. The product thus concentrated at the mine will vary in the content of monazite from 20 to 85 per cent.; the impurities consist chiefly of mechanically admixed garnets and quartz sands, with one or more of the other accessory minerals enumerated above; all of which are separated by the magnetic concentrator.

The South Carolina monazite thus recovered contains from 3 to 7.25 per cent. of thoria (ThO_2) and exceeding 60 per cent. of the mixed oxides of cerium, lanthanum and didymium; all of which afford values to the industrial arts. Thoria is principally valuable for its incandescent properties, which are utilized

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in the Welsbach incandescent mantles. The cerium is likewise valuable for the purpose.

(Near Shelby, N. C., a "ledge" through which monazite is liberally disseminated, is quarried, crushed and mechanically concentrated, and the resultant product subjected to the magnetic concentrator. Ledges admitting of this treatment are not of frequent occurrence.)

For descriptions of the individual properties see "A Catalogue of the Mineral Localities of South Carolina."

Uses of Monazite.

The contained thorium and cerium are separated in the form of nitrates and utilized for their incandescent properties, notably in the manufacture of Welsbach mantles.

GRAPHITE.

The hydromica schists of the Chatooga, Saluda, Tyger and Anderson-Spartanburg Zones comprise occasional occurrences of graphite, interstratified with the foliated schists, and apparently connected with the original sedimentation to which the related slates owed origin.

The most persistent band of these graphite schists extends along the southerly part of the Anderson-Spartanburg Zone with exposures in Cherokee County along the Whitakers Mountain ridge (Sur. Nos. 6332, 6362, 6403).

These exposures are constituted of bands of highly pitched schists, variably interlaminated with graphite, in zones from 12 to 30 feet in width. An analysis of an average sample across the face of an exposure afforded 3 per cent. of carbon.

A consistent belt of these graphite schists extends along the Rocky River Valley in Anderson County, with exposures interruptedly extending to the Savannah River, near the old Crafts Ferry. One body of this material was worked to a limited extent during the eighties (Sur. Nos. 1185, 1761, 1780).

A subordinate belt of graphite schists extends along the Chauga Zone near the older limestone in Oconee County (Sur. Nos. 1020, 1022, 1065); the percentage of contained carbon in the slate mass rarely exceeds 1 per cent.

Uses of Graphite.

Most extensive use is for the manufacture of refractory crucibles. Dynamo brushes; arc-light pencils; superior grades used for pencils and crayons.

Lubricants; steam packings; coating for insulated electric wires; stove polish; in electrolytic and electrotype processes; fireproof paint. The invention of artificial graphite has seriously affected the value of the natural article for which it is a substitute in most of its uses.

The low grade graphites are used in connection with foundry facings.

MICA AND FELDSPAR.

These minerals in sizes available to the useful arts occur as the determining constituents of pegmatite in the Chatooga Zone, the Saluda Zone, and the Anderson-Spartanburg Zone. They represent pegmatite masses included by mica schists and the gneissoid rocks. In the Chatooga Zone a fine body of feldspar in pegmatite extends from the Georgia side. (Sur. No. 1009.)

In the Saluda Zone west of Pickens a good grade of feldspar appears in conjunction with a fairly good body of mica (Sur. No. 1590).

In the Anderson-Spartanburg Zone, below Greenville, a fine body of mica, feldspar and flint has recently been opened to a depth of 60 feet (Sur. No. 5215). Peculiar interest attaches here to the associate occurrence of columbite (south of this locality a fine mica prospect occurs (Sur. No. 5225). Southwest of Anderson several bodies of pegmatite have been mined for the contained mica (Sur. Nos. 1140, 1173, 1175), the work has been essentially surficial and without system, but excellent material has been obtained and marketed. In the Saluda Zone a good mica prospect occurs in Oconee County (Sur. No. 1527).

Numerous prospects of subordinate promise occur in the Saluda and Anderson-Spartanburg Zones.

The Miller-Teague Mine (Sur. No. 5215) is the only active producer of mica; this mica is of good dimensions and is associated with a fine grade of feldspar.

For descriptions of the individual properties see "A Catalogue of the Mineral Localities of South Carolina."

Uses of Mica.

Finest sheets required for covers for compasses and other mathematical instruments.

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Sheet mica is used to afford translucent spaces in furnaces and stoves; also for insulation of electric machines; also for lamp shades. Scrap mica is extensively used in electric insulation; also as a lubricant; fireproof coating; sizing for wall paper; bronze powder; in the manufacture of "Micanite," or scrap sheets cemented by a flux under high temperature and pressure. Used in the manufacture of sectional coverings for steam pipes, coverings for boilers, etc.

Uses of Feldspar.

In the manufacture of pottery and glass; glazing ceramic wares; soap manufacture; dentistry.

CORUNDUM.

Corundum occurs in the Chatooga Zone, the Saluda Zone, the Anderson-Spartanburg Zone, and in the Abbeville-York Zone.

In the Chatooga Zone it appears in chlorite schists, which appear to have resulted from the alteration of peridote, along the zone of contact with the gneissoid rocks. The corundum, in grains and small crystals. often appears as nuclei to small indurated masses of chlorite schist, but ordinarily the corundum and chlorite, without parallelism of arrangement, occur in distinct layers. Actinolite, as a secondary mineral in acicular crystals, is associated with the corundum in the Chatooga Zone. The bodies of corundum observed in this zone are not extensive (Sur. Nos. 1090, 1407, 1460).

In the Anderson-Spartanburg Zone corundum appears largely confined to the thin surface beds of hydro-mica slates and schists, the degradation of which has left the hard corundum scattered over the surface in the form of grains, tabular pieces, and modified prisms attaining as much as three and a half inches in length.

Such occurrences are conspicuous in Laurens County, but they rarely present economic quantities of corundum. (Illustrative localities, Sur. Nos. 1776, 5250, 6300).

In the Abbeville-York Zone (near Nanny's Mountain, Sur. No. 7025) corundum occurs along the contacts of gneissoids and mica slates, pitched at high angles, in close proximity to a prominent dike of plagioclase porphyrite, which at the distance of 1.5 miles (S. W.) appears in contact with an extensive body of limonite and pyrrhotite.

For descriptions of the individual properties see "A Catalogue of the Mineral Localities of South Carolina."

Uses of Corundum.

For abrasive purposes; emery wheels; to limited extent in the manufacture of aluminum.

Comprises valuable gems: Sapphire (blue); oriental emerald (green); oriental ruby (red); oriental amethyst (purple); topaz (yellow).

GEMS AND GEM STONES.

The Gems and Gem Stones of South Carolina occur chiefly in the Anderson-Spartanburg Zone, along which they extend from the North Carolina line to the Savannah River, notably in association with the rocks of the monazite belt. These rocks comprise hydromica slates, mica schists, graphite schists, aplite, granulite, greisen and pegmatite.

Garnets.—The garnets occur disseminated through mica schists, aplite gneiss, and other gneissoids, chiefly as isolated crystals and grains of common almandine, which occasionally appears in the precious form. While it is of very wide distribution, no bodies of garnet of economic importance have yet been observed.

Lieber (III, 63) reports massive garnet in lower Pickens and submits the following analysis by Dr. Genth: Silica, 37.62 per cent.; Alumina, 19.19 per cent.; Ferric Oxide, 2.66 per cent.; Ferrous Oxide, 19.95 per cent.; Manganous Oxide, 9.89 per cent.; Magnesia, 3.50 per cent.; Lime, 7.01 per cent.; Total, 100.82 per cent.

(Sur. No. 1775) Lee Shoals, Anderson County. A deep red massive garnet is irregularly distributed in a feldspathic matrix, associated with pegmatite, and inclosed by mica slates.

An appreciable quantity of garnet, chiefly in fragments, is separated from the monazite sands, partly on the screens and partly by the magnets, at the concentrating plants; this by-product has not yet been utilized.

Beryl, Emeralds, etc.—While specimens of beryl are rarely found in the northeastern half of the Anderson-Spartanburg Zone, good crystals occur in the pegmatites in the southwestern portion, notably in Anderson County, where

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high grade gems have been obtained. The fine grained mica slates and pegmatites associated with the beryl are indistinguishable from the rocks in which the monazite occurs. Beryl has been noted at the following localities: Alexander (J. B.) place (Sur. No. 1176), 3.2 miles S. W. of Iva; McConnell (J. M.) place (Sur. No. 1755), E. of Anderson; Anderson City, near Harrison Springs (Sur. No. 1758).

(Sur. Nos. 5148 to 5155). The monazite section adjacent to Pelzer, in Greenville and Anderson counties, has furnished some fine specimens of aquamarine, beryl (and tourmaline).

(Sur. Nos. 6300 to 6315). Occasional specimens of beryl are found in the monazite sands in Cherokee County.

MATERIAL: EMERALD (AND TOPAZ?). SURVEY NO. 1755.

Area: Savannah. *Sub-Area:* Rocky River; Beaverdam Crk. Br.

Location: Anderson County; McConnel place; 3.5 miles N. 26° E. of Anderson.

Address of Owner or Representative (?): J. M. McConnel, Anderson, S. C.

OBS—The country rock consists essentially of mica slates of extremely fine texture; the biotite in some instances is so fine that in softened masses it affords the appearance of graphite. Numerous masses of pegmatite are infolded by the mica schists. The formation is very similar to the monazite-bearing formation near Gaffney.

The pegmatites include some mica of fair grade, and crystals of beryl, and, it is said, occasionally topaz. The beryl crystals are very clear, and of an excellent shade of green; stones cut from these crystals can with difficulty be distinguished from the oriental emerald. The beryl chiefly occurs in prisms penetrating the feldspar.

CORUNDUM SERIES OF GEMS (AND ZIRCON).

Crystals of the corundum series occur along the monazite belt sparsely disseminated in widely separated patches of mica slates. At the two most promising localities the corundum is associated with zircon.

MATERIAL: CORUNDUM, GEMS (AND ZIRCON). SURVEY NO. 6300 TO 6320.

Area: Santee. *Sub-Area:* Broad River; Bowen River.

Location: Cherokee County.

Address of Owner or Representative (?): Andrew Moore *et al.*, Gaffney, S. C.

OBS—Hornblende slates, mica slates and pegmatite formations, hydromica slates, quartzitic slates, and various highly feldspathic rocks (average strike N. 30° E., dip 20° S. 60° E.)

(Sur. No. 6316). A bold igneous dike, striking N. 53° E., cuts through between the hydromica slates and hornblendic slates. The hydromica slates in this vicinity expose, where disintegrated, scattered zircons.

(Sur. Nos. 6300 to 6320). The feldspathic or pegmatite series has afforded several good sapphires, and, it is stated, one fine oriental emerald from the vicinity of Porters Hill (Sur. No. 6309).

Many of the branches, tributary to Bowens River, which originate in this section afford deposits of monazite of variable extent. Scattered specimens of corundum appear. While no systematic exploration for gems has been undertaken, a number of small sapphires, some of which came under the observation of this survey, have been found in the Bowen River section (one sapphire sold for $75.00); a valuable oriental emerald is said to have been found here (and sold in Charlotte, N. C.); numerous small oriental (?) topaz crystals are said to have been found (Sur. Nos. 1776-1777). The Thompson and Jackson places (see Corundum 1776-1777) afford some fine crystals of corundum in delicate shades of pink and blue; associated with zircon; no pronounced gems yet observed.

Numerous localities in Laurens County afford scattered crystals of corundum (see Corundum), but none have been observed suitable for gems.

AMETHYST.

North of the Abbeville-York Zone veins of quartz assume in spots the amethystine type. Superior grades of crystals are found in Cherokee, Anderson and Abbeville counties.

(Sur. No. 1225). McCalla place, Abbeville County, east of Lowndesville. Specimens of superior amethyst were received from this locality.

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(Sur. No. 1380) Sherard (W. T. A.) place, Anderson County, near Moffettsville, south of Iva. Amethyst of exquisitely clear color occurs in crystals, both individual and clustered. The Smithsonian Institution purchased some fine specimens from this locality. It occurs in narrow, and apparently disconnected, pockets in the mica slates.

(Sur. No. 1395) Barnes place, Abbeville County, 1.8 miles N. of Lowndesville. Specimens of superior amethyst.

(Sur. No. 6301) Bowen River basin, Cherokee County. Fine crystals of amethyst occur in small veins in the mica slates.

SUNDRY GEM FORMS

Rutile occurs chiefly in the Anderson-Spartanburg Zone in connection with the monazite belt. Fleches d'amour is the characteristic form. Specimens of crystal masses have been received from the vicinity of Prosperity.

Tourmaline appears in sundry localities north of the Abbeville-York Zone; it occurs disseminated through the gneissoids and mica schists, and in quartz veins. A few crystals with a fairly clear blue-green color have been found near Pelzer.

Cyanite.—This mineral occurs very extensively distributed in the metamorphosed rocks, but none suited for gems has been observed. An interesting type occurs in Greenville County. It consists of a coarse granular aggregation of white crystals with a faint tint of green, due to minute flakes of a material resembling talc, which is probably fibrolite, colored with a trace of some silicate of iron. The cyanite individuals have a brilliant pearly pinacoidal cleavage with transverse parting.

Thin section reveals the presence of both sillimanite and cyanite. Both are colorless; they display brilliant interference tints. The cyanite, which predominates in quantity, extinguishes at considerable angles to the cleavages, while the sillimanite extinguishes parallel to the cleavages in the principal zones. The brilliantly polarizing matted aggregate, resembling talc, is probably fibrolite.

Chemical analysis shows: Silica, 39.23 per cent.; Alumina, 58.74 per cent.; Ferric Oxide, 1.04 per cent.; Lime, trace; Magnesia, trace; Water at 120° C., 0.24 per cent.; Water at red heat, 0.17 per cent.; Total, 99.42 per cent.

FROM THE COASTAL PLAIN

Amber.—Occasional rounded lumps of crude amber appear immediately superimposed on the phosphate rock. The quantity is too small to be of economic importance.

Chalcedony.—The King's Creek Silex (Oligocene) includes nodular masses of chalcedony ranging through dull white, pink, and blue colors. Some specimens exhibit fossil coral.

Formerly extensively utilized by the aborigines in the manufacture of arrow and spear heads; the former "chipping ground," near Kings Creek landing on the Savannah River, comprises more than an acre, the soil of which abounds in chips of this material, and numerous fragments of arrow heads.

PART III.—CRYSTALLINE REGION

METALLIC GROUP

GOLD.

The gold formations in South Carolina pertain to three main types (with intergrading phases), to wit: The Tyger, the York, and the Lancaster types. Each of these three types affords placer or gravel deposits of gold.

Tyger Type of Gold Vein.—Gold veins of this type are chiefly observed in the Chatooga, Tunnel Hill, Saluda, Tyger and Anderson-Spartanburg Zones, and in subordinate numbers in other zones. The Tyger type comprises veins, stringers and stockwerke of gold-bearing pyritic quartz, which ramifies the gneissoids and schists, or irregularly extends along their planes of contact, or planes of contact with rocks of pyroxene derivation. The country rocks are gneissoids and schists, of both mica and hornblende types; intrusive granite and basic igneous dikes are respectively observed in the proximity of some of the ore-bodies.

Some of these veins perhaps originated as the final gold-bearing pegmatite and quartz apophyses of granite intrusions, which were thus licked-out in narrow flame-shaped tongues into the overlying or contiguous rocks, the inclosing walls of which in rare instances exhibit signs of igneous metamorphic action; but the predominant number of these veins appear to have been deposited from solution, and have in a measure impregnated the inclosing rock with portions of the

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mineral contents of the original solutions. Many of the pegmatite bodies appear to have resulted from the slow consolidation of pasty aqueo-igneous matter.

These veins, with possibly few exceptions, have shared with the schists in the contorting and foliating effects of such orographic movements and other dynamo-metamorphic forces as have prevailed since their formation; they are very old.

Type veins may be observed at the old Lawton (Sur. No. 1323); Lay (Sur. No. 1430); Cheohee (Sur. No. 1460); Cureton (Sur. No. 5710); McBee (Sur. No. 6715); Schlegel Milch (Sur. No. 6481); Magnolia (Sur. No. 6483); and the Brown (Sur. No. 6485) mines.

York Type of Gold Vein.—Veins of the York type occur principally in the Abbeville-York Zone, typically in York and Cherokee counties. The inaccessible character of the underground aspects of many abandoned mines of this type greatly restricts the premises for an entirely satisfactory classification. Numerous microscopic investigations have been undertaken in connection with a detailed study of the geognosy of some of the more prominent ore-bodies of this class, and whereas these investigations up to this time are not definitely conclusive, the preponderance of evidence impresses the writer with the probability that these ore-bodies represent the aqueo-igneous recrystallization of elements of a magma (afforded by igneous intrusions) into new forms, which appear to have segregated in successive and repeated irregular zones of more or less limited extent, and in irregularly intertwined clusters and numerous disconnected lentiform masses. In some cases the complete envelopment, or want of physical connection, of crystals of sulphides and other minute ore-bodies encased in the core of huge metamorphosed igneous masses, of dense, hard, uninterrupted crystalline angular texture, precludes any reasonable theory of metasomatic replacement by extraneous solutions as insufficient. In other words, the York type of gold vein appears to be of the aqueo-igneous, or pneumatolitic, type, the principles of which have been elucidated by Daubrée, Arrhenius and others. Through these principles it might be conceived that the component and accessory minerals of heated igneous rocks, in the presence of super-heated aqueous vapors, far below the melting point of the rock body, partly resolve themselves into new combinations which were impossible at the point of fusion, and which more or less segregate in accordance with the strength of their respective affinities; and at the same time exude solutions taken into circulation by vein waters to be concentrated or precipitated in fissures, cracks, pores, parting planes, or other openings where conditions are favorable; or to enter the various forms of replacement.



LOW GRADE GOLD ORE.

Primarily this class of vein involves two or more kinds of associate intrusive rocks, in contiguous narrow bands, pitched at moderately steep angles and rarely aggregating more than 100 feet in thickness, but frequently of considerable lineal extent, although sometimes appearing as mere bosses. Pyroxene now altered to amphibolite appears essential; and diorite, varying to quartz-diorite, often forms part of the mass which is usually flanked by a quartz-sericite schist, apparently derived from a porphyry, perhaps quartz monzonite. Each of the three is impregnated with gold-bearing sulphides, but the amphibolite preponderantly so. Gold-bearing pyrite, some chalcopyrite, and rarely niccolite, in disseminated grains, crystals and masses, constitute the material of value, they are more or less associated with quartz, the latter frequently as a mere film, but occasionally in large sulphide-bearing bodies.

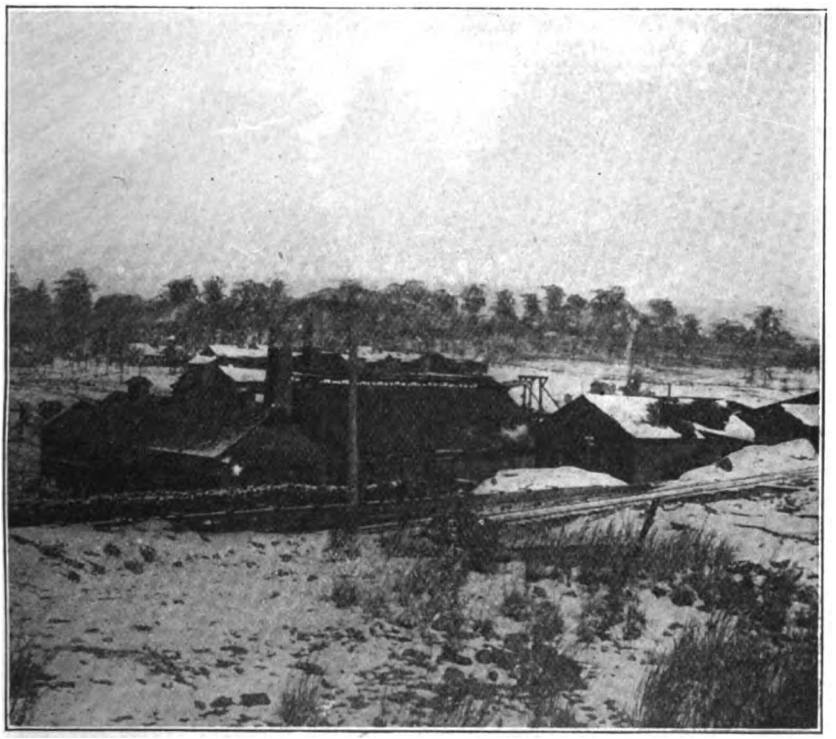
The ore-bodies in the amphibolite occur in irregularly distributed lenticular masses with their longer axes parallel to the line of outcrop; these bodies vary in size from microscopic to 50 feet long, and as much as 10 feet in width; successive bodies are often without apparent connection; they occur along diverse parallel planes, often without suggestion of sequence.

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Distinctly isolated crystals of gold-bearing pyrite are observed, encased in dense masses of foliated amphibolite, without signs of strain in the surrounding particles; and without suggestion of channels for the circulation of a menstruum essential to provide supply and eliminate waste in replacement processes (depending on extraneous solutions), for the amphibolite exhibits sharp unrounded angles.

Some replacement has doubtless occurred; some co-ordinately with other features of aqueo-igneous action; but the more extensive changes such as the alteration to calcite, etc., might have occurred much later. Ilmenite, magnetite and chlorite are observed as secondary minerals.

The ore-bodies in the diorite masses generally occur in the portion adjacent to the amphibolite; the ore consists of disseminated grains and small crystals



CHEMICAL REDUCTION PLANT HAILE GOLD MINE.

of sulphides (pyrites), with but little quartz, and whereas gold values prevail they are not high.

The sulphides in some instances appear sparsely disseminated through a wider range in the diorite than in the amphibolite, the segregative action having apparently served to condense much of the ore matter in bunches in the altered pyroxene mass.

The quartz-sericite schist is often pyritic, but very low in gold values; if replacement were the determining principle in the genesis of the ore-body the essential character of this portion of the rock formation should incline us to expect more liberal action.

In thin section foliation is exhibited very strongly, emphasized in both the amphibolite and the quartz-sericite schists, and subordinately in the diorite.

In some cases the diorite and altered pyroxene intergrade along a highly pyritic zone, in others there is a mere suggestion of a plane of division; but insufficiently conclusive evidence of requisite igneous metamorphic action along these planes has been observed to require the assumption that these igneous

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masses represent successive contiguous intrusions. The fact that the amphibolite is more foliated than the diorite does not necessarily establish greater age, because the character of amphibolite probably yields more readily to such parallelism of arrangement, under both dynamo-metamorphic and aqueo-igneous forces.

Insomuch as igneous magmas have a well recognized original capacity for gold-bearing pyrite, chalcopyrite, niccolite, etc., it is conceivable that magmatic segregation, incident to the process of cooling, caused the original magma to resolve itself into rock zones varying from predominantly basic to acidic, with these sulphides diffused through the mass, but with a rude concentration in and adjacent to the more basic material; and that the ore-producing matter in the more susceptible pyroxenic material might in some cases have exercised new



OPEN-CUT MINING, BEGUELIN PIT—HAILE GOLD MINE.

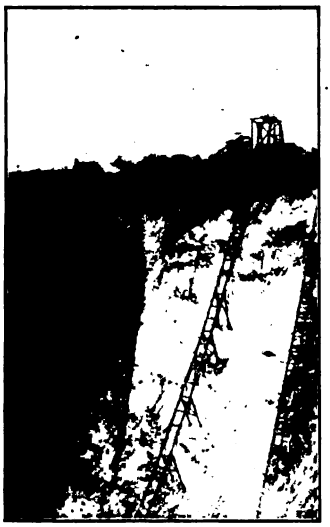
affinities in the incipient fluid state, produced in the magma by intense aqueo-igneous forces; in consequence of which the ore matter has accumulated in lenticular masses about the respective nuclei which dominated successive areas in the semi-fluid magma, by virtue of the well recognized tendency of like matter to assemble in such state. Corresponding principles of origin and concentration might, of course, apply with equal force if the igneous intrusions should represent successive events.

It might, of course, be assumed in either case that the mineralization subsequently proceeded from solutions from unseen or remote pre-Cambrian or later granites, which solutions have preferentially penetrated these hard, dense, tough igneous rocks (infolded by fissile gneissoid slates and schists) and permeated their interstitial pores to replace here and there particles of the igneous rock with a crystal of sulphide and quartz and at the same time eliminate the replaced matter.

Lancaster Type of Gold Vein.—The existence of this class of vein deposits in South Carolina appears to have depended upon igneous intrusions which did not necessarily contain within themselves the metalliferous vein stuff or gangue,

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but which by virtue of contained and associate heat stimulated the deep circulation of the great solvent water, which highly heated ascended passages or trunks in the proximity of the dikes. These heated waters, in passing through more or less deep-seated mineral beds, disassociated and dissolved certain constituents such as the alkalies, sulphides, silica, gold, etc., according as they were present; upon ascending to the zone of fracture near the surface these solutions penetrated the fissures, the cracks, and the fine parting planes of schists (accentuated by surficial influences) and the interstitial spaces of porous rocks, where the minerals in solution were variably deposited, with the gradually changed rate of cooling, or where certain of the minerals in solution were precipitated either by gases or by the chemical character of the invaded rocks. The rate of cooling probably constituted the most prolific factor in the deposition of the vein matter, but each of the other causes operated in relative degrees, varying with the individual conditions which prevailed at the respective localities.



HAILE PIT.

These deposits having originated as late, perhaps, as the Jura Trias, have not been subjected to the protracted degrading action to which the older veins have been subjected, and therefore the younger deposits exhibit more of the original highly fractured and porous surficial rock which received the greater volume of the ore deposits; for it will be appreciated that with increased depth the schistose partings have been less accentuated by weathering, and that the rocks are more dense and less permeable, and that apart from the fissures or cracks inclosed with sharply defined hard walls and apart from such openings as occur along the contacts of the dike and the inclosing walls of rock, that the capacity of the deep-seated rocks for vein matter is much more limited.

The Haile (Sur. No. 7550) and the Dorn (Sur. No. 1885) mines pertain to the Lancaster type, and have, with the Brewer (Sur. No. 7635), constituted the great gold producers of this State; the Lamar (Sur. No. 7295) also is of this type.

The Haile is still continuously and extensively operated, and treats about 60,000 tons of ore each year. Other gold mines, some of which have been regular and others intermittent producers during the past two years of survey, are: Blackmon (Sur. No. 7527); Brown (Sur. No. 6485); Magnolia (Sur. No. 6483); Darwin (Sur. No. 6476); Brassington (Sur. No. 7547); Gregory (Sur. No. 7360); Calais-Douglas (Sur. No. 1949); Schlegal Milch (Sur. No. 6481); Allison (Sur. No. 6610); Ferguson (Sur. No. 6450); Ophir (Sur. No. 5936).

PLACER DEPOSITS.

All gold veins and stringers which have come to the surface have suffered more or less weathering, degradation and erosion, which has resulted in the accumulation of the disrupted particles and nuggets of native gold in the neighboring depressions, flats, and stream beds. The softer or more saprolitic rocks yield to a larger extent to these forces and consequently afford the greater placer beds.

The more prominent observed deposits of this type have been developed at the following properties: Lawton (Sur. No. 1323); Cheohee (Sur. Nos. 1445, 1460); Westmoreland (Sur. No. 5610); Wolfe & Tyger (Sur. No. 5712); McBee (Sur. No. 5715; Martin (Sur. No. 6474); Haile (Sur. No. 7550); Gregory (Sur. No. 7630); Brewer (Sur. No. 7635).

Where the greater streams course through auriferous zones long-continued erosion has scoured particles of gold into the stream channels, where they have accumulated in the deeper parts, at the foot of the successive rapids. This class of deposit appears somewhat prominent in the bed of the Catawba River where it crosses the Abbeville-York Zone. Dredges have been operated for these gold gravels with varying success on this river.

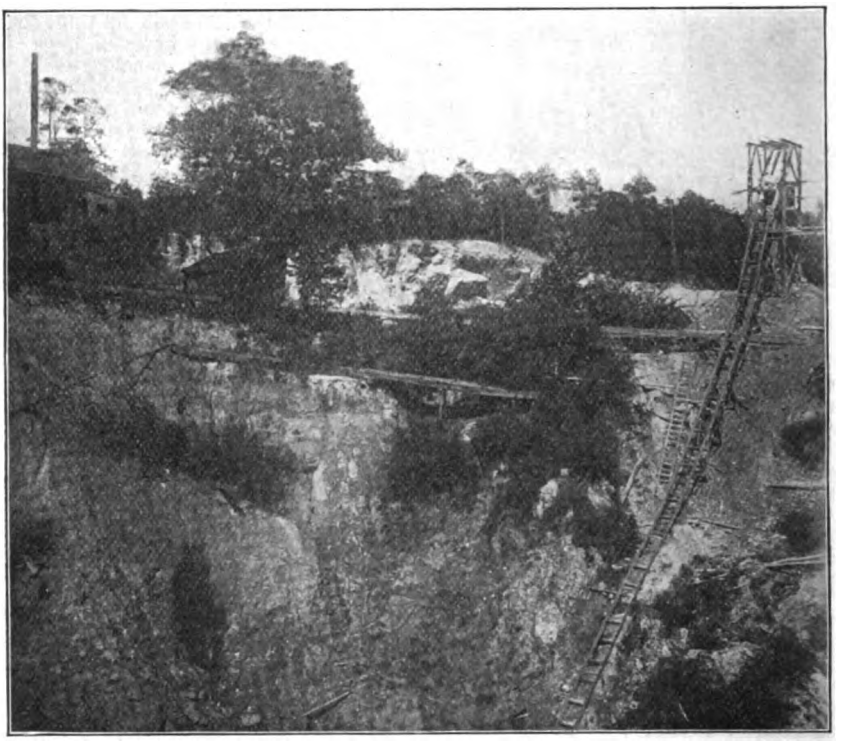
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Another class of placer deposit was afforded during the Lafayette time by violent floods, which wore away the soft saprolitic gold-bearing rocks and concentrated the included gold in part in depressions along the high plateaus. This character of deposit was worked in Chesterfield County, near Westfield Creek (Sur. No. 7700), where the gold was mingled with the Lafayette Cobbles. The Tanyard placer deposit, high on the Brewer Mine ridge, possibly originated in somewhat similar causes (Sur. No. 7635).

For descriptions of the individual properties see "A Catalogue of the Mineral Localities of South Carolina."

Uses of Gold.

Pure gold extensively used for gilding, especially in the ceramic arts; Wagner states that the Staffordshire potteries alone consume $300,000 worth annually. Also used in dentistry.



BEGUELIN PIT, SHOWING HOIST-WAY—HAILE GOLD MINE.

Alloys.—Most extensive consumption of gold is in the manufacture of alloys with copper or silver for coinage, for jewelry, and for other ornamental purposes.

Chemically.—Cassius-purple employed for coloring; salts with soda and potash employed in photography, and in medicine.

NICKEL AND COBALT.

Nickel associated with copper and gold, and inclosed by a prominent igneous intrusion, occurs at the Culbreath Mine in Saluda County (Sur. No. 5470). Chalcopyrite and perhaps niccolite with gold are in a degree concentrated along a zone, which in the igneous mass affords a strong probable instance of magmatic segregation; cobalt is also associated in very small quantities.

Dana (1878) reports the occurrence of cobalt mixed with manganese near Silver Bluff in Aiken County with the following composition: cobalt oxide 24 per cent., manganese oxide 76 per cent. This, perhaps, represented a local aspect of the Barnwell phase of ferruginous sandstones which were consolidated

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by cementing solutions and oozes of various composition, which also occasionally filled insignificant pockets in the sandstone. The locality indicated is confined to Cretaceous sands and clays, and to Eocene shales, sandstones and sands.

For descriptions of the individual properties see "A Catalogue of the Mineral Localities of South Carolina."

Uses of Nickel.

Small coins; nickel plating.

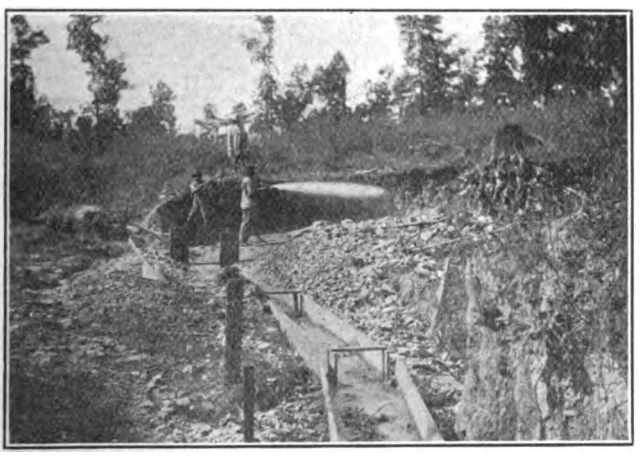
Alloys.—German or nickel silver. Tiers-argent. Nickel steel, extensively used for armor plate, propeller shafts, connecting rods, etc. Cobalt is usually associated with nickel.

Uses of Cobalt.

Pigment for blue paints; coloring porcelain wares and glazes; neutralizing yellow color in ceramic wares; various chemical reagents.

COPPER.

Copper appears in the Abbeville-York Zone more prominently than elsewhere in South Carolina. It occurs subordinately in various zones, more or less sparsely disseminated in the form of chalcopyrite (or its decomposition products), as an accessory mineral to many of the vein bodies, of both replacement and fissure types. In quantities of economic promise, it occurs in York and



TIN MINING.

Saluda counties. In the latter chalcopyrite and gold are associated with nickel (and described thereunder, Sur. No. 5470); the ore-body is apparently the result of magmatic segregation. In York County it occurs at the Mary Mine (Sur. No. 6820), the records of which indicate that the ore-body consists of a fissure filling, and at the Big Wilson (described under gold, Sur. No. 6818), where chalcopyrite of deep occurrence, associated with supernatant pyrite and gold, are enveloped in a mass of altered pyroxenite; no final opinion was possible, as the deep artificial exposures were under water, but the quality of copper ore exhibited from the 102-foot level was good.

No ores of copper are mined, for copper, in South Carolina.

For descriptions of the individual properties see "A Catalogue of the Mineral Localities of South Carolina."

Uses of Copper.

Metal.—Sheet copper; sundry utensils; wire; conductors of electricity; copper plate engraving; tubes; nails; rivets.

Alloys.—Bronze, comprising: bell-metal; gun-metal; statuary bronze; aluminum bronze; brass; muntz-metal; German or nickel silver; Sheffield plate; copper-amalgum.

Chemical Compounds comprise: Blue vitriol (or bluestone), employed as insecticide; germicide, notably in relation to the typhoid germ in water supplies; for pigments and in various dyeing and printing processes; as a cauterant in surgery. Various laboratory reagents.

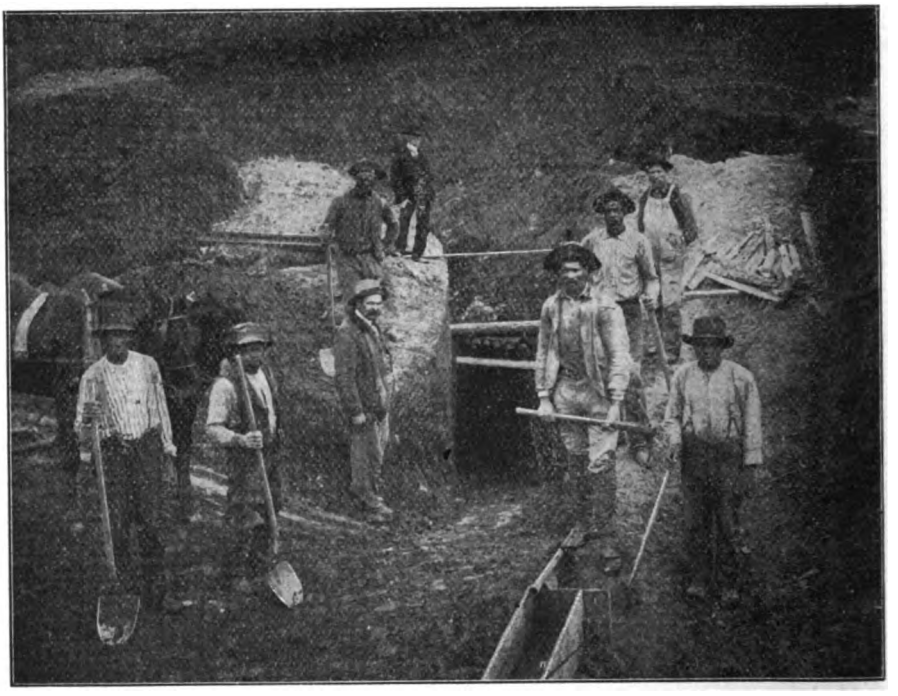
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Copper Pigments.—Brunswick green; Bremen green; Bremen blue; Casselmans green; Scheeles (or mineral) green; Schweinfurt (or emerald) green; oil blue; Genteles green; verdigris.

The natural carbonates of copper (Malachitè and Azurite) extensively utilized in the manufacture of articles for ornamental purposes, such as vases, table slabs, etc., etc.

TIN.

Veins of tin ore occur near the Cherokee Zone on the line of the Anderson-Spartanburg Zone. At the locality prominently exploited the tin ore (Cassi-



AT THE MOUTH OF THE INCLINE—ROSS TIN MINE.

terite) occurs in a mass of pegmatite (var. quartz and oligoclase) which has been intruded through pyroxenite (var. augite) and along the contact plane of the latter with its foot wall (aplite gneiss). A fibrolite schist resembling talc, and inclosing cyanite and sillimanite, constitutes the matrix of the cassiterite near the surface, oligoclase is the matrix at greater depths; and occasionally quartz. The pegmatite mass, which incloses the tin ore appears expanded in places to nine feet and constricted in others to less than a foot in diameter. The tin ore has irregularly assembled in clusters of individuals varying in size from grains to three inches in diameter, many of which present at least one crystal face; some single clusters yield as much as a half ton of ore each.

The cassiterite as concentrated yields about 70 per cent. of metallic tin singularly free from prejudicial associate metals. Approximately 130 tons of this ore have been mined from the Ross property, near Gaffney, in the process of exploration.

Amphibolite, hornblende, brown mica, muscovite, chlorite, calcite, fibrolite, cyanite, sillimanite and garnets occur as associate products of metamorphic action. Magnetite, apatite and pyrrhotite occur as accessories in those portions of the pyroxenite which have been altered to amphibolite.

The tin-bearing pegmatites extend from Gaffney, interruptedly exposed, to and beyond the North Carolina line (Sur. Nos. 6105, 6245), but the Ross Mine (6245) affords the only observed instance of tin-bearing pegmatite inclosed by pyroxene.

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For descriptions of the individual properties see "A Catalogue of the Mineral Localities of South Carolina."

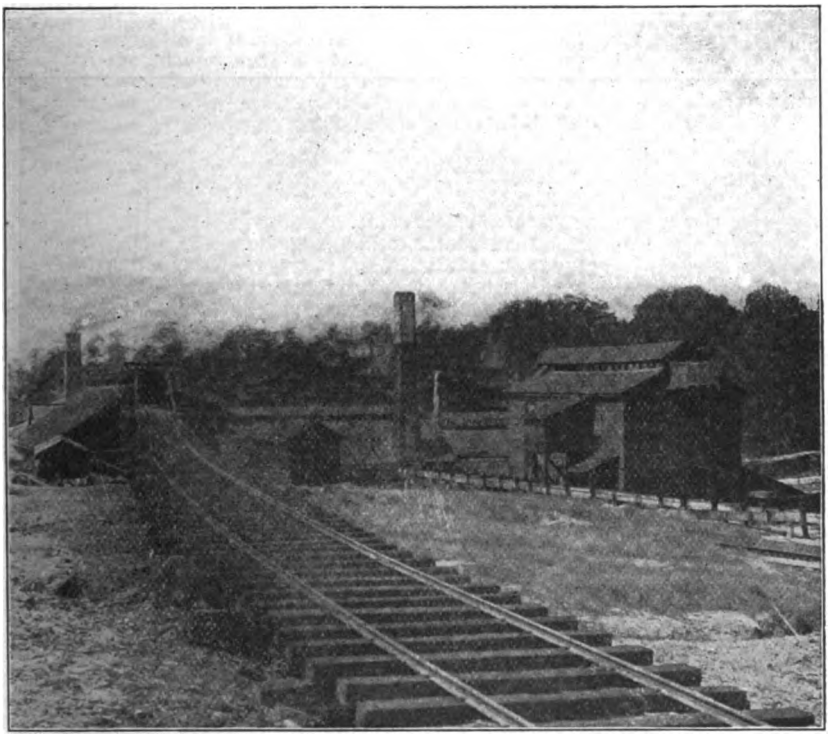
Uses of Tin.

Block tin is used in the manufacture of pipe and other articles required in the laboratory, and in the chemical industries. Foil comprises both pure and alloyed tin.

Alloys.—Bell-metal, gun-metal and statuary-metal constitute the bronzes. German silver (some forms); Britannia-metal, pewter and anti-friction metals.

The most extensive use of tin is for "tin plate," or sheet iron which has been immersed in molten tin.

The salts of tin: Mosaic gold; tinsalt, used in dyeing and calico printing; physic (or nitrate of tin) and pinksalt (or double chloride), used in the manufacture of dyes; stannate of soda, used for dyeing and calico printing.



MILL AND CONCENTRATING PLANT—HAILE GOLD MINE.

The oxide of tin is used in the ceramic arts in producing white enamels, opaque glasses, etc.

Basis of some laboratory reagents.

LEAD.

This metal occurs in South Carolian as galena in small quantities in quartz veins cutting the gneissoids and to a limited extent in barytes at Kings Creek Station.

The Kuhtman vein (Sur. No. 1465), located in Oconee County near the head of Cheohee Creek, was worked to a limited extent during the early "sixties"; it exhibited a small quartz vein carrying crystals of galena, the country rock being gneissoid.

The Cameron Mine (Sur. No. 6135), situated in Cherokee County on Limestone Creek, was operated during the exigencies of the Civil War. It presented near the surface a carbonate of lead which graded with moderate depth to galena; at a greater depth Siderite (carbonate of iron) predominated.

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Uses of Lead.

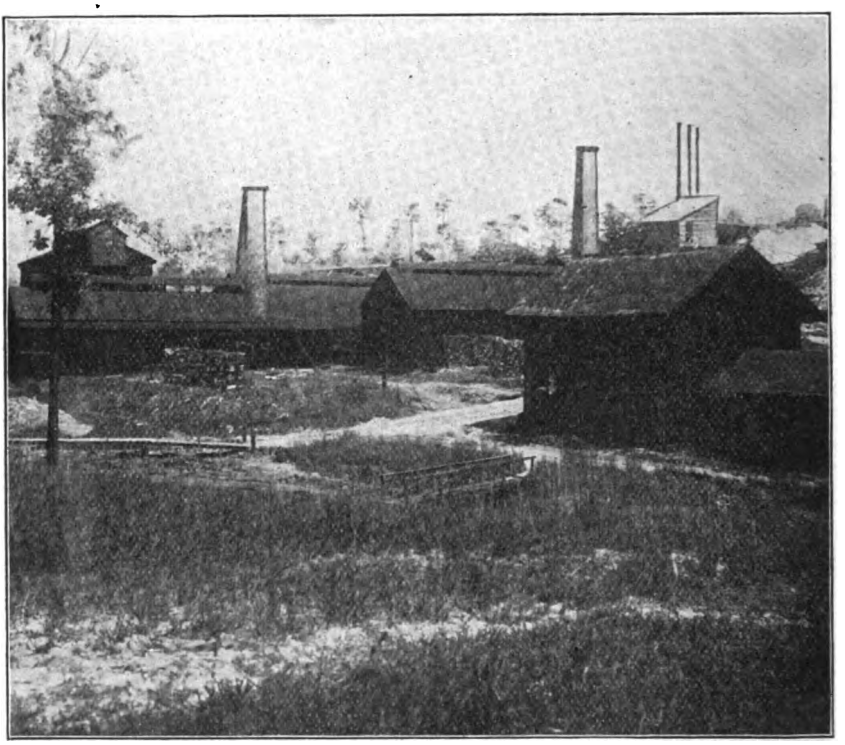
Pipes and fittings for plumbing; sheet lead for acid chambers, and for roofing; shot.

Alloys.—Solder; type-metal; babbit-metal, and other anti-friction alloys; pewter; organ-pipe metal. Compounds used in glass-making, and in medicine.

Pigments: white lead; red lead; chrome yellow; Naples yellow; Pattersons white, and the white sulphate.

MANGANESE.

Manganese occurs in subordinate bodies in various zones; in deposits of economic promise it appears in the Abbeville-York Zone. It is observed intercalated with the slates extending along the northerly slope of the Kings Mountain ridge (Sur. No. 6434); immediately south of Smiths Mountain (Sur. No. 6285), near Drayton Mountain; and near the Tyger River, south of Glenn Springs (Sur. No. 5765).



CHEMICAL REDUCTION PLANT—HAILE GOLD MINE.

Beginning west of New Market (Sur. No. 2005) a second belt extends southwesterly with exposures west of Breezewood (Sur. No. 2050) and immediately south of McCormick (Sur. No. 1886). The bed near McCormick is of excellent promise; the hard ore affords 53.60 per cent. of metallic manganese combined, in part, to form 71.56 per cent. of manganese dioxide; the soft ore contains 32.34 per cent. of manganese in part combined to from 31.78 per cent. of manganese dioxide, which is valuable in bleaching, to which purpose the monoxide is not adapted.

No manganese ores are mined in South Carolina.

For descriptions of the individual propertics see "A Catalogue of the Mineral Localities of South Carolina."

The Uses of Manganese.

In the manufacture of steel.

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"Spiegeleisen" contains manganese in varying proportions up to 30 per cent.; "ferro-manganese" contains manganese in proportions varying from 30 to 92 per cent.

In the manufacture of oxygen.

Manufacture of bromine, iodine and chlorine (more recent method now prevails in the manufacture of chlorine).

For coloring glass, pottery and enamels.

In colors for calico printing.

Preparation of permanganate of potash and other manganese salts.

For making dryers for paints and varnishes.

For variegating face bricks.

As disinfectant.

Leclanché battery.

The value of manganese ores depends:

I. In the manufacture of steel, on the amount of metallic manganese contained and on its freedom from associate phosphorus, sulphur and titanium.

II. In the manufacture of oxygen, chlorine, bromine and iodine, the value depends on the percentage of combined oxygen in excess of the amount combined as monoxide (MnO); in other words, on the quantity of free oxygen it is capable of yielding (difference in amounts of MnO and MnO_2).

IRON.

Iron ores occur in bodies of subordinate importance irregularly distributed throughout the Crystalline Region, and to a limited extent in the Eocene formations of the Coastal Plain. The ore-bodies of economic susceptibilities occur principally in the Cherokee Zone, in the Anderson-Spartanburg Zone, and in the Abbeville-York Zone.

Where the hematites prevail the dip of the strata varies from approximately flat to highly inclined; where the specular ore prevails the strata are pitched at high angles; where the principal magnetites prevail the strata are greatly contorted.

Cherokee Zone.—The principal iron ores in this zone are of three classes: Hematites; Specular Schists; Segregated Magnetites.

While numerous bodies of iron ore in this zone occur in sedimentary rocks, there are no iron ore beds of unquestioned sedimentary origin. Highly foliated rocks of probable sedimentary origin infold numerous beds of intercalated specular schists (including Lieber's itaberite), which were derived from pyrite of uncertain origin; many of these ore beds grade to pyrite, with perhaps some pyrrhotite, below the valley lines. Lieber reports that at one of these localities (Sur. No. 6373) barytes is intercalated with the schists.

I. About one-half mile northwest of, and parallel to, the main limestone outcrop an irregular and interrupted belt of iron ore occurs which chiefly comprises hematites intercalated with fine grained mica schists. While observed at numerous points along this line, the Hardin ore bank, which comprised red hematite, is the only observed ore-bed of even modest prominence; it strikes N. 60° E. and dips 40° N. W.; it skirts the base of Whitaker's Ridge and is included in the northwesterly monocline of the Kings Mountain uplift.

II. Specular Schists.—Specular schists infolded by mica schists occur in several highly tilted zones, some of which attain the thickness of 40 feet, along the strike of a series of rocks probably 1,500 feet wide. The associate rocks, in addition to the white, yellow, pink and brown quartz-mica schists which embody extremely fine grained quartz, and which weather slightly friable, comprise dark and dirty green hard slates with strikes varying from N. 43° to N. 63° E., and dips ranging from 56° to 70° S. E. They are limited on the northwest by a foliated green gneissoid rock inclosing pyrite, etc.

The specular ore extends northeasterly about seven miles along a zone parallel to, and east of, the Catawberite belt; the two being one-half mile apart. This zone crosses Broad River immediately south of the mouth of Doolittle Creek, and thence proceeds beyond People's Creek, where the strike curves from southwest to northerly, which change in strike is maintained by the associate strata several miles along the western side of People's Creek, in a belt about 1.2 miles wide. This northerly curving of the strata appears to represent the terminal southwesterly expression of the Kings Mountain uplift, which was probably caused by a vast uplifting force, the more prominent effects of which extended from People's Creek northeasterly along the line of the Blacksburg Valley.

The specular schist consists of scales of specular iron mixed with subordinate magnetite grains, and intercalated with a very fine grained mica schist, which

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becomes friable on exposure. When the scales of the iron ore are small the texture is granular and the color iron gray, it comprises a small amount of magnetite. Where the scales are large the gray becomes darker and assumes a silvery lustre, very little magnetite is present in macroscopic form.

Lieber predicated a distinction on the relative amounts of specular iron and magnetite present in an ore; where the former prevailed he designated the ore-bodies specular schists, where magnetite prevailed he denominated the ore mass itaberite. The itaberite comprised mixtures of magnetite with subordinate specular iron, and a little quartzose matter; texturally it is granular, structurally schistose; it is decidedly magnetic. The color of a freshly fractured surface is gray; in the streak, red. The general color of the mass is brown and red above the valley line, and red below. Some of these beds have been observed grading to pyrite, with perhaps some pyrrhotite below the valley levels. Along the approximate line separating the magnetites from the specular schists, about 1.2 miles southwest of Blacksburg, a recently dug well exhibits the following gneissoid rock:

"Color dull green-gray. Fine uniform grain with foliated structure; breaks with a flat fracture. Abundant inclusions of cube-octahedrons of pyrite. In thin section: Quartz in angular grains. Abundant chlorite; apparent alteration product of biotite; in ragged shredded flakes and aggregates wrapping around the harder minerals; green, weakly pleochroic; contains extremely minute grains of magnetite in abundance. Feldspar constituent of this gneiss is a much granulated acid plagioclase, free from weathering; includes apatite."

III. Segregated Magnetite.—The segregative beds appear to have been derived from the aqueo-igneous alteration of a vast intrusive mass of ferro-magnesian rock, possibly pyritic, the southerly exposure of which is approximately delimited by People's Creek. From this point it is traceable northeasterly about 5 miles, crossing the Broad River above Cherokee Ford and about 3,500 feet south of and parallel to the line of outcrop of the principal limestone formation; northeast of Blacksburg this magnetite formation becomes obscure. It consists of lenticular bodies of magnetite crowded in chloritic schist, pitched at high angles, attaining in places the width of 30 feet and extending to depths as yet undetermined. The sorted ore in large lots exceeds 50 per cent. of metallic iron, and is free from objectionable association excepting in the matter of the magnesian gangue, which adds somewhat to the difficulties of fluxing. The exposures of this ore adjacent to the Broad River are the most prominent and most favorably situated for development.

The original basic ferro-magnesian rock and its inclusions have been resolved into three main forms, to wit:

(a) Greatly contorted dark gray-green schist, with submetallic lustre, (Silica, 30.56 per cent.; Alumina, 13.70 per cent.; Magnesia, 31.32 per cent.; Ferric Oxide, 3.48 per cent.; Ferrous Oxide, 3.98 per cent., etc.); in some localities this chlorite schist consists of flakes of chlorite arranged with the parallelism affording fissility; in the other localities the chlorite appears under the microscope as a matted mass of parallel shreds, inclosing magnetite in irregular grains. Epidote, garnet and limonite occasionally occur as accessories.

(b) The iron has been separated in clustered grains of magnetite segregated in large lenticular masses in eschelon, and in other forms of irregular distribution.

(c) Irregularly distributed bunches of asbestos (Silica, 56.62 per cent.; Magnesia, 23.37 per cent.; Lime, 13.16 per cent.; Ignition, 1.62 per cent.) attain the occasional diameter of two feet.

These magnetite ores aggregate large quantities of high grade iron; the amount of gangue matter involved in the mining of these ores, and the necessity for sorting, or other concentration, involve serious items of cost, as against which their otherwise very high grade must perforce prevail upon the exhaustion of the high grade steel ores in other sections.

The magnetic ore or Catawberite, afforded a peculiarly superior iron, close grained and soft, yet tough, which was extensively employed in the manufacture of the Confederate ordnance. Furnaces and rolling mills were operated for this purpose adjacent to the Cherokee Ford on the Broad River. Specular ore was also employed in mixtures, and alone, for the production of superior pig metal for castings. Itaberite, a low grade arenaceous magnetite, also afforded good pig metal for castings.

Anderson-Spartanburg Zone.—Two miles north of Gaffney beds of brown hematite ores occur in pockets in mica slates associated with much clayey matter. The available ore, which was quite shallow was freely drawn upon by the old Cowpens and Pacolet furnaces. The mica slates strike northeast and dip southeast. These beds find their counterpart about six miles north of Gaffney,

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where slates with similar strike dip to the northwest, indicating a former intermediate anticline whose crest has been degraded, thereby exposing the upturned edges of the strata, consisting of hornblende and mica slates, including much pegmatite; monazite occurs between Gaffney and Thicketty Ridge in the pegmatites and fine mica slates; intermediate to the two zones which carry the hematite ores.

A promising prospect of hematite occurs in Anderson County one mile west of Starr (Sur. No. 1378).

Abbeville-York Zone.—Hematites and magnetites occur in this zone.

The principal bodies of magnetite represent extensive segregated deposits in the basic eruptives, notably in Abbeville (Sur. No. 1858). This magnetite contains too much titanium to be available as an iron ore, in the present light of technical knowledge. Numerous narrow veins of magnetite occur, but they are generally high in titanium (Sur. Nos. 1720, 1765).

Hematite occurs in subordinate deposits at many localities. Nanny's Mountain, in York, contributed its ores to small furnaces during the eighteenth century; the ore consists of the eisenhut of an extensive bed of pyrrhotite (Sur. No. 7030). Near Wolfe Creek the McCaw property exhibits a promising bed of compact crystalline hematite of an excellent grade (Sur. No. 6470).

For descriptions of the individual properties see "A Catalogue of the Mineral Localities in South Carolina."

The Uses of Iron.

Many of the very extensive uses of iron are too generally known to require enumeration.

The pure red oxide has attained great prominence in its connection with "thermit." Pigments: Indian-red, Venetian-red, minium, metallic paint and ochre grade from pure oxide of iron to mixtures containing as low as 33 per cent. Red ochre consists of red hematite mixed with clay. Yellow ochre consists of limonite (yellow oxide) mixed with clay. Umber and Sienna represent ochres with the natural or artificial mixture of oxides of manganese.

In various combinations iron affords numerous salts, which are used in dyeing and calico printing, such as Prussian-blue, Antwerp-blue, Leitchs-blue, Alexandria-blue.

The sulphate of iron, or copperas, is employed as a mordant in dyeing and calico printing; in the manufacture of ink; as a disinfectant; in the precipitation of gold.

Iron constitutes the base of various pharmaceutical compounds, and laboratory reagents.

Scrap metallic iron is used for precipitating metallic copper from its solutions.

The principal impurities which prejudice the value of iron ores are sulphur, phosphorus, titanium.

PYRITE OR IRON PYRITES.

Uses of Pyrite or Iron Pyrites.

Formerly pyrite was extensively used in the manufacture of sulphur, which was thus further used in the manufacture of gunpowder and matches, and as an insecticide.

Principal consumption now afforded in the manufacture of sulphuric acid. The residual cinder affords an acceptable iron ore when the sulphur is reduced to less than one per cent.; also ground to afford a crude pigment; abusively used as a "filler" in the manufacture of commercial fertilizers.

PART IV.—COASTAL PLAIN

NON-METALLIC GROUP

MARL—GLAUCONITE.

Marl is invested with great importance in its relation to prospective manufacturing enterprises in the production of portland cement, lime, and sand brick; also in its application to the improvement of agricultural lands, and to the betterment of roadways. In depth and areal distribution the beds of marl in South Carolina are vast; in physical condition they range from the softness of plastic clay to the hardness of the best limestone; in quality they comprise grades exceeding 90 per cent. of Calcium Carbonate. Soft, fine grained and almost gritless varieties occur which contain over 70 per cent. of Calcium Carbonate, no Magnesia, and almost sufficient Alumina to constitute a natural

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cement limestone; soft grades high in lime, phosphoric acid, and potash, offer an excellent fertilizer with which to effect an economic regeneration of the lands adjacent to these beds; deposits high in both lime and magnesia, and therefore of value to the cereals, also occur.

These marls have greater potentialities for the permanent improvement of lands than has been realized from the chemically treated products of the phosphate beds, which are active but ephemeral and ever require expensive renewals of application. In New Jersey the judicious application of marl to lands has resulted in the most remarkable increase in productiveness and enhancement of values. In these respects her lands, at one time poor and almost valueless, now excel the lands of some of our most favored agricultural sections.

At Bostick and other points in South Carolina where fields were judiciously marled more than forty years ago, the advantages of such fields over their unmarled neighbors, separated by no more than twenty feet, are obvious.

Marls in South Carolina occur in parts of the Cretaceous, Eocene, Oligocene, Miocene, Pliocene and Pleistocene formations. Their exposures are principally along the rivers and their tributaries, within the lower two-thirds of the coastal plain, and increasing within certain limits as they approach tide water. Thus the Edisto, Ashley, Cooper, Santee, Pee Dee and Waccamaw rivers, and their lower tributaries, expose enormous deposits, some constituting bluffs thirty feet in height and extending to great depths below the water line. The Ashepoo and Savannah river-banks afford marls, but of less frequent and less prominent exposures.

Along the Edisto River marl is interruptedly exposed from Holloman's Bridge to a point four miles below Branchville, and thence to a point near the Charleston and Savannah Railroad bridge; along the Ashley River from its source to the Charleston and Savannah Railway bridge; along the Cooper River from its source to the Charleston Naval Station; along the Santee River from Half Way Swamp (Orangeburg County) to Wambaw Creek; along the Pee Dee River from the mouth of Jeffries Creek (in Florence County) to Topsaw Landing (about 17 miles northeast of Georgetown); along Lynches River from Old Effingham to the Pee Dee River; along the Waccamaw River from Hammond to Bucksville.

The beds best adapted to the manufacture of cement occur along the Santee and the Ashley and Cooper rivers, where good water is available for navigation. Experimental briquettes of cement made from the Ashley marl exceeded by 50 per cent. the tensile strength required by th U. S. Army Engineer's specifications. The upper portion of the marl along the Santee River is very hard and is well adapted for road metal. The black soft cretaceous clay-marl (lower part of Burches Ferry phase of marl), commonly called soapstone, which occurs prominently developed along the Pee Dee River and its tributaries, in beds exceeding two hundred feet in thickness, represents a good agricultural marl, which should be extensively utilized. It shows prominently on Bigham's Branch (Florence County) and at Ards Landing (on Lynches River), from which point it extends under the lower part of Williamsburg County.

In addition to the above marl, beds of Greensand marl (or glauconite) occur in this State at numerous points, their value consisting mainly in the contained phosphoric acid and potash, the latter being in the form of a compound silicate of potash, which is but slowly soluble.

There are two extensive plants with kilns, equipped for mining and calcining the Tertiary marls between the Ashley and the Cooper rivers, which prepare lime chiefly for agricultural purposes.

For descriptions of the individual properties see "A Catalogue of the Mineral Localities of South Carolina," or "The Marls and Other Coastal Plain Formations of South Carolina."

FULLERS EARTH

This material derives its name from its former use in the extraction of grease. In England the fullers earth beds form a distinct subdivision of the Triassic formation, but in South Carolina the so-called fullers earths are shales belonging to the Black Mingo and Congaree phases of the Eocene, and to the Parachucla shales of the Oligocene. The Hampton Clays of the Lafayette respond fairly well to bleaching and filtering tests.

The Eocene belt, which affords the large bodies of fullers earth, extends from the Savannah River along the upper part of Hollow and Town creeks, and thence by Aiken, beyond which it is largely obscured by sands until exposed along the ridge between the two forks of the Edisto; east of the north fork it is exhibited in a gritty form near the head of Congaree Creek, and along

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the south side of the basin which is formed by First and Second creeks. Here it assumes a finer grained form, which extends by Gaston, near Congaree Bluff, along Sandy Run, Little Beaver Creek, Wachte Hill, Lyon Creek and Warley Hill to the Santee River, which it crosses, and is thence exposed along Fullers Earth Creek, Wedgefield, Moore's Spring and Catchall.

The above belt comprises the typical Congaree shale, which is interstratified with very thin seams of mica and fine sands. It attains in places the thickness of approximately 40 feet and generally includes molds of fossil shells. In color it varies from gray-white through drab to a dark slate. Its specific gravity varies from 1.75 to 2.00. This material bleaches well, and filters well, and is excellently adapted for the treatment of the mineral oils; some objection to the imparted flavor has prejudiced its use for the treatment of the culinary oils and fats. From the vicinity of Sumter one line of this material extends southeasterly in thin beds associated with the Black Mingo shales.

The Black Mingo shale or fullers earth appears along Black River from Brewington Lake interruptedly to Perkins Bluff. An examination of the related section reveals along the bed and banks of Black River, and some of its tributaries, a bed of fullers earth which in many places attains a thickness exceeding thirty feet. The character of this bed varies very slightly in chemical and physical properties in different localities, but important variations, to be noted, are observed in passing from the top to the bottom of this deposit: the upper fourth part of this bed consists of yellow, dove, and light slate colored, stratified layers of fullers earth separated by extremely thin layers of micaceous matter; this fullers earth yields easily to any cutting implement. This upper fourth, however, is so high in alumina content that good filtration, which is required in its uses, is somewhat prejudiced. The middle two-fourths parts of the bed consist of thicker stratified layers of a dark slate colored material irregularly stained with iron oxide; it is too hard to yield to the knife, having been partly silicified. Near the middle of this two-fourths zone a layer of fossiliferous marl occurs which is high in contained lime, but which rarely exceeds the thickness of one foot; this layer requires careful exclusion.

The lower or bottom fourth part of this bed carries, in many places, an appreciable amount of iron pyrites, which upon exposure weathers and thereby forms copperas and alum, both of which are objectionable. It will, therefore, be observed that the middle two-fourths parts of this deposit constitute the article of greatest commercial promise.

In some favorable localities, notably near the "Lower Bridge" (four miles south of Kingstree), the upper soft, one-fourth part has been scoured away by floods and other forces of time. In such places the expense of extracting the more desirable portion of the bed should, of course, be much less than in those localities where the upper one-fourth part is still intact, and therefore represents largely "dead work."

It might be competent to note that in the case of diatomaceous earth the burning process ordinarily employed in the preparation of fullers earth should be either eliminated or conducted with extreme care, for the reason that high heat causes the fine porous diatomaceous silica to combine with the bases present to form an incipient glass-like mass, without porosity, and therefore without value for clarifying fats, oils, etc.

Fullers earth is treated and utilized in the following manner: After having been air-dried for a few days it is crushed to pass a three-quarter-inch mesh-screen; thence it is conveyed through a rotary dryer heated by a crude-oil furnace to a temperature not exceeding 212° F. Each cylinder will dry from 30 to 60 tons of wet fullers earth in twenty-four hours, the capacity varying with the amount of moisture present. It is then ground and railed to supply demand for three separate grades respectively of fifteen, forty and ninety mesh sizes.

For descriptions of the individual properties see "A Catalogue of the Mineral Localities of South Carolina," or "The Marls and Other Coastal Plain Formations of South Carolina."

PEAT.

"Moor-peat," or partly decayed vegetable matter which maintains its fibrous character, and "fuel-peat," which is dark and represents a more advanced stage of decomposition, occur in South Carolina. No extensive beds of peat have been observed in the crystalline area; several small deposits of moor-peat of comparatively recent origin underlie very limited swamps; others, of probable Lafayette antecedents, occur with thick overburdens of clay, high above the main valley lines (see Sur. No. 5173).

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The coastal plain swamps afford some beds of probable late Pleistocene and Recent antecedents; they present the moor-peat type; some of the rice fields exhibit beds of moor-peat of variable extent and thickness. An extensive body of peat occurs interruptedly along the Combahee River, notably under the marshes which extend to the head of Bull River. A marginal fringe of fuel-peat, underlying the probable equivalent of the Bohicket marl-sands, is interruptedly exposed along the ocean beach-line of Horry and Georgetown counties (see Sur. No. 953). The extent of the peat beds of South Carolina will be investigated in fuller detail during the ensuing year (1907).

Uses of Peat.

Fuel.—The relative value of pure peat (including 22 per cent. moisture) as a fuel as determined by Prof. Klasson, of the Swedish Commission, is about 20 per cent. greater than wood (with 20 per cent. of moisture); the following figures were submitted as expressing the relative heat values:

Wood.	Peat.	Brown Coal.	Steam Coal.	Anthracite.
49	57	60	80	86

As a fuel peat is used in several forms:

I. The peat fresh from the bog is squeezed, pugged, dried and then solidified under pressure in molds with forms convenient for transportation and use.

II. Peat coal is prepared by heating peat to a temperature of approximately 400° F.; said to compare favorably with bituminous coal. When carbonized in closed vessels one ton of high grade peat affords about 1,000 pounds of peat coal, and, as by-products, 9.5 quarts of illuminating oil, 4.7 quarts of heavy oil, and 2.8 pounds of paraffine.

Ethyl Alcohol is obtainable from peat by a special process which affords about one gallon of absolute alcohol from the ton of peat.

Artificial Wood for structural purposes is made from peat.

Peat Fibre is manufactured into a yarn and into textile articles such as wearing apparel, blankets, surgical bandages (highly antiseptic), etc. Peat fibre is also used in the manufacture of paper.

Moss Litter derived from the partially decomposed portions of the peat beds, is known as "moor-peat." As prepared from the moor-peat the moss litter is used for filling mattresses; as a packing for fruits and fish; as a litter for domestic animals, etc. etc.

SAND.

GLASS SAND; SAND BRICK SAND; BUILDING SAND; LOCOMOTIVE SAND.

Coastal Plain.—A belt of sands, of probable Columbia equivalence, extends across the State south of the fall line and constitutes the capping of the "sand hills." This material is fine grained, sub-angular, and hard; it affords a very good grade of locomotive sand.

The sand interstratified with the Cretaceous Clays is very pure, with the exception of a small amount of admixed kaolin, which is removed by a washing process, which thus furnishes a high grade sand (Silica, 99.63 per cent.; Alumina, 0.37 per cent.), which is utilized in the manufacture of glass.

A greatly broken belt of fine grained high grade glass sand interruptedly extends across the western part of the State above the littoral line of the Miocene formation.

Material, Glass Sand (Sur. No. 382).—Barnwell County, near Ulmers; Edisto area; Salkehatchie River sub-area; John F. Weekly, Ulmers, S. C. Analysis: Alumina, 0.15 per cent.; Manganese Oxide, trace; Ironsesquioxide, 0.31 per cent.; Silica, 99.53 per cent.; Water and organic matter (ignition), 0.16 per cent.; Total, 99.97 per cent.

Material, Glass Sand (Sur. No. 923).—Clarendon County; Pee Dee area; Pocotaligo River sub-area; John M. Tindal, Tindal, S. C. Analysis: Alumina, 0.89 per cent.; Ironsesquioxide, 0.38 per cent.; Silica, 98.61 per cent.; Loss on Ignition, 0.15 per cent.; Total, 100.03 per cent.

Material, Glass Sand (Sur. No. 929*a*).—Clarendon County; Pee Dee area; Brewington Lake; Deep Creek sub-area; W. H. Muldrow, Wilson, S. C. Analysis: Alumina, 0.15 per cent.; Ferric Oxide, 0.10 per cent.; Silica, 99.56 per cent.; Water and volatile matter, 0.05 per cent.; Total, 99.86 per cent.

A belt, designated the Ten Mile Ridge which interruptedly extends parallel with the coast, west of the Santee River, consists of very fine grained sands,

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which are utilized in the manufacture of sand brick. The most prominent exposures appear in the Edisto area, notably across the Ashley and Cooper basins, and near Yemassee.

Building Sands.—The beds of bold fresh water streams afford deposits of superior gravel and sands, notably along the expanded portions where the flood water currents are arrested by resisting tides.

A very extensive deposit of superior building sand thus occurs in the portion of the Edisto River immediately above Dawho Creek, which constitutes the main source of supply of this material to the city of Charleston.

The Pee Dee drainage system affords important deposits near the line of the Wando Pass.

PHOSPHATE BEDS.

Geographic Limits.—Geographically the South Carolina phosphate beds occur interruptedly along a belt, the lower limit of which extends along a meandering line from a point near the source of the Wando River to the mouth of Broad River; this line irregularly varies from 6 to 20 miles distant from the present coast line of the outlying "sea islands" located east of the Ashepoo River. From the Ashepoo to the Combahee rivers an apparent gap occurs. From the Combahee River the southerly line extends by Morgan Island and St. Helena Island, beyond which the phosphate zone disappears under the ocean.

There are five main groups, constituted of a series of lesser areas, which afford beds of phosphate rock of commercial importance, to wit: The "Wando Basin," the "Cooper Basin," the "Ashley Basin," the "Edisto Basin" and the "Coosaw Basin."

The Wando Basin comprises the drainage territory tributary to the Wando River above Cainhoy, principally on the northerly side. The Wando Basin probably joined the Cooper Basin along the eastern branch of the Cooper River.

The Cooper Basin comprises the drainage territory tributary to the Cooper River above the U. S. Navy Yard, and comprises deposits on the eastern branch, on the western branch (with thin beds extending to Hell Hole Swamp), on Back River, on Foster's Creek, on Goose Creek and on Fiddlers Creek, with its westerly limit along the railway from a point north of Ashley Junction to Ten Mile Hill. The Cooper Basin joins the Ashley Basin at the head of Nine Mile Bottom.

The Ashley Basin comprises the drainage territory of the Ashley River, the Stono River, the eastern branch of Rantowles Creek, and the head of Wadmalaw River. Its circumscribing line extends from a point slightly north of Ashley Junction to Ten Mile Hill, and thence to Greggs on the Ashley (with thin patches as high as Captains Creek), thence around Bear Swamp, and down the west side of South Swamp to a point near the mouth of Rantowles Creek (a tongue extends along the north side of Stono River to the Wadmalaw River), from which the line returns along the south side of Stono River to the Cherokee Mines, and proceeds northeasterly to the Ashley River (one mile below Bees Ferry), and thence northerly to the upper side of the ridge above the Charleston-Savannah Railway, which ridge delimits it to the initial point of the line above Ashley Junction.

The northwesterly point of the Ashley Basin approaches the northeasterly point of the Edisto Basin.

The Edisto Basin comprises the drainage territory tributary to the Edisto River, from Sullivan's Bridge to a point two miles north of Jacksonboro, to Horse Shoe Creek, from Horse Shoe Mines to the mouth of Chechessy Creek, and up the latter creek to its source.

The Coosaw Basin comprises phosphate deposits under marshes and islands and in the beds of the wide intervening waterways.

The circumscribing line starting from Cotton Hope on the Combahee River, proceeds around Morgan Island and thence along St. Helena Island to Beaufort River, with a tongue extending through Archers Creek to Broad River; from Port Royal the line extends up Beaufort River and through Brickyard Creek to the Coosaw River, and thence proceeds up Whale Branch and north of Chisolms Island, whence it returns to Cotton Hope.

There are several detached outlying patches connecting or bordering the above cited main basins; one of subordinate prominence in the bed of the Edisto River near the confluence of Dawho Creek; one of low grade material along the northerly border of Hell Hole Swamp.

The apparent break in the continuity of the beds between the Ashepoo and Combahee rivers was probably due to a ridge of Parachucla shales, which is exposed along the Salkehatchie River unencumbered by calcareous marls; the

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delimiting influence of these shales is impressively exhibited near the mouth of Huspa Creek and along the Coosawhatchie River, where tides prevail. These Oligo-Miocene shales were merely suggested by Mr. Tuomey as the possible equivalent of his buhrstone siliceous clays.

Immediately superimposed on the phosphate beds we successively observe Salkehatchie oozes (rarely) the Post Pliocene marl of the Wadmalaw type, the Bohicket marl sands, the Accabee gravels with irregular inclusions of rounded phosphate rock and pebbles, Wando clays and sands, Sea Island loams and sands; a complete series, however, is rarely observed at any one locality.

Industrial.—The upper area of this phosphate belt affords a rock too low in phosphoric acid to be of immediate economic importance. The customary guarantees are 58 per cent. and 55 per cent. of calcium phosphate on land and river rock respectively. The deposit varies in thickness from a few inches to three feet, twelve inches representing a good deposit and affording about 1,100 tons per acre. The thickness of the over-burden admitting of economical handling will, of course, vary with the thickness of the deposit, with the market value of the rock, and with the factor of transportation. With a good 12-inch seam of rock valued at $3.50 per long ton, for rock f. o. b. mines, the maximum thickness of the over-burden would be about 14 feet for machine mining, and 7 feet for hand mining. Formerly the land mining was performed entirely by hand; the



CRETACEOUS AND TERTIARY CLAYS—FLOYD'S MILL, DARLINGTON COUNTY.

over-burden being removed by a system of open trenches of lengths varying according to drainage exigencies. Each miner is assigned 18 feet along the face of the uniformly advanced trench, from which he throws the over-burden to the previously exhausted area in the rear; the underlying rock, bedded in a matrix of calcareous mud, is picked loose, and then heaved by shovel to unbroken ground above; whence it is removed on wheelbarrows to tram-cars and handled thence to the washer, where the mechanically attached mud and sand, amounting to from 50 to 65 per cent. of the mass, are removed. It is next dried in kilns or in simple heaps piled on wood; after the burning of which the rock is ready for the fertilizer factory to which it is transported, and there ground and chemically treated. The system of hand mining has to a large extent been displaced by the introduction of land dredges or steam shovels, which discharge direct into tram-cars on movable tracks. Steam shovels have been successfully operated to a depth of 19 feet on a 14-inch seam of rock.

The deposit of phosphate rock was very soon recognized, after its discovery in 1867, as extending across and overlying the beds of the streams and bays and under marshes which, being within tidal range, and therefore the property of the State, were promptly laid under tribute to the State treasury.

The phosphate rock from the State waters has been chiefly devoted to the export demand, its low content in iron and alumina making it more attractive to the European market.

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That portion of the phosphate deposit found in the bed of the streams is denominated river rock and is mined by means of floating dredges, and then treated by the same process that is applied to the product of the land mines. The river rock was first mined by means of tongs operated by laborers on small flat boats. But the exhaustion of the shallow rock necessitated the use of steam dredges, which have been operated to the extreme depth of 52 feet, where the rock was extracted under 16 feet of mud. The depth, however, from which the river rock is now extracted does not ordinarily exceed 30 feet.

The ground rock treated with sulphuric acid constitutes acid phosphate which is the basis of all modern commercial fertilizers.

By means of another chemical process the phosphorus contained in this rock is extracted and employed in the arts, conspicuously in the manufacture of matches. Other chemical processes applied to this rock contribute sundry compounds to the pharmacy.



LOWER CRETACEOUS CLAYS WITH LAFAYETTE COBBLESTONES SUPERIMPOSED.

CLAYS.

High Grade.	*Low Grade.*
China Clay.	Tile Clay.
Paper Stock Clay, Kaolin.	Brick Clay.
Ball Clay.	Argillaceous Shale.
Fire Clay.	Ferruginous Shale.
Potter's Clay.	Calcareous Shale.

RESIDUAL KAOLINS.

The residual kaolins, as concentrated for the trade, vary from moderately fusible to highly refractory, according to the amount of and character of the fluxing impurities.

No residual deposits of kaolin have been commercially developed in South Carolina, and whereas there are many indications of such veins scattered throughout the granitic or crystalline region, the occurrences of most conspicuous promise yet noted are along a zone in close proximity to the trappean rocks, extending from Mount Carmel to King's Mountain; the dynamic influences of these igneous rocks probably predisposed the feldspar, etc., to rapid kaolization through allotropic modifications.

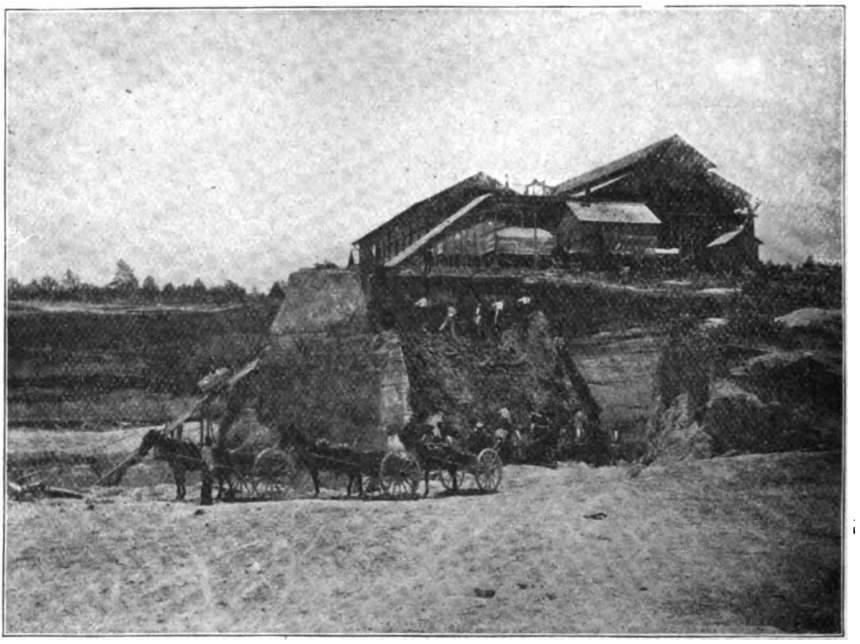
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SEDIMENTARY KAOLINS.

The sedimentary kaolin beds in South Carolina range in purity from 99 per cent. of clay substance to the lowermost grades.

Some sedimentary clays fulfill the conditions of china clays in being lean and in burning to a white body without crazing or displaying other physical defects.

These kaolins are extensively distributed in the Savannah River area, the Santee area and the Edisto area, in the counties of Aiken, Lexington, Richland and Kershaw. The Savannah River area affords one of the most remarkable exposures of sedimentary kaolin in the United States, not only in its relations to quality and quantity, but in the scientific interest attaching thereto. From Hamburg to Aiken we observe a zone of these clays extending fourteen miles in length by five miles in width, with numerous barrens caused by pre-Eocene erosions and the degradations of recent drainage.



SEDIMENTARY KAOLIN MINE—REMOVING THE OVERBURDEN.

These beds of kaolin vary from five to twenty-five feet in thickness, with an overburden of cross-bedded sands, thin laminæ of clay and occasional Lafayette loams and cobbles ranging in thickness from nil to more than one hundred feet. Thickness of the kaolin determines the amount of overburden that can be economically removed. This overburden is degraded by laborers with pick, shovel and cart, or with scrapes or steam shovels, until a sufficient terrace of clay is bared for extraction. This kaolin is moved in the lump form to the dry sheds, where, after exposure to air and light for a few weeks, it is packed in casks of one ton capacity and shipped to the consumer. It probably represents the largest body of clay closely approximating kaolinite that is found in the United States.

The Aiken area also affords important deposits along Beaver Pond Creek and Hollow Creek.

The Edisto area reveals interesting beds of these clays on North Edisto River, between Cook's Bridge and Merritt's Bridge and along Fox Creek; superior deposits along the South Edisto River, along Chalk Hill Creek, Juniper Creek, Marbone Creek and near Sand Dam Bridge.

The Santee area reveals valuable beds along Thom's Creek, Cedar Creek, Colonel's Creek, Shaw's Creek, Swift Creek, Rafting Creek and Pine Tree Creek, and in some places adjacent to the Congaree and Wateree rivers.

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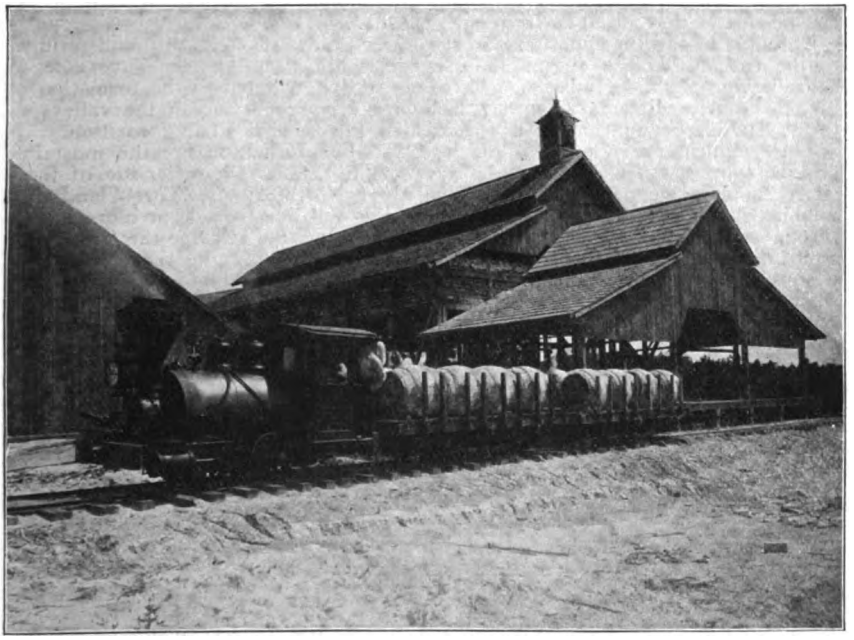
In addition to the foregoing class, which requires no other preparation than simple drying, there are considerable beds of Cretaceous clays commingled with sands which are susceptible of concentration by the usual washing process. There is a modern plant for such purpose in operation at Seivern, S. C.

The class of clays designated, Middendorf, prevails in large beds in the Aiken, Santee and Pee Dee areas. In color they are very pale greenish-yellow, but burn to a white body with quite variable shrinkage. Their tensile strength is superior to that of the whiter clays. Their extreme fineness of particle renders them much more fusible than other clays similar in composition but coarser in texture.

WOOD PULP KAOLIN.

Many of the sedimentary kaolins occurring as described in the preceding paragraph are, by reasons of their previously noted limitations, devoted to the manufacture of wood pulp paper.

The paper stock clays are white plastic kaolins of either residual or sedimentary extraction, which, upon burning, either cinder or develop color or other incorrigible defects unsuiting them to the ceramic arts.



SHIPPING CASKS OF KAOLIN.

FIRE CLAYS.

Clays adapted to the manufacture of refractory articles are known as fire clays and are ordinarily subdivided into flint clays and plastic fire clays.

There are no flint clays in South Carolina, these clays belonging to the coal measures.

The equivalents of the plastic fire clays, combining the refractoriness of flint clays, we have in the lower Cretaceous formations, ranging in composition from the common grades to the best imported German product.

The sedimentary fire clays of South Carolina are found in the Cretaceous, the Eocene and the Neocene formations, along the zone contiguous to the fall line. Some beds of fire clay of unmistakable sedimentary origin and others of meta-residual extraction are found in the crystalline area. These meta-residual clays are employed to bond the more refractory clays and the Middendorf sedimentary beds should be serviceable for the same purpose.

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STONEWARE CLAY AND POTTERS' CLAY.

These clays represent successive gradations between fire clays and tile clays, the fire clays extending the gradations upward to the limits of kaolin.

Throughout the Crystalline Region we observe occasional patches of both residual and sedimentary clay suitable for the coarser grades of potters' ware, the best results are secured by mixing the residual or meta-residual clays with the coastal plain sedimentaries, which are abundantly available for this purpose.

SEWER PIPE OR VITRIFIED BRICK CLAYS.

The clay body for the required wares has been heretofore derived from shales or from recent deposits of alluvial pipe clays, or, more ordinarily, from a mixture of the two. The shales ordinarily employed as a source of tile clay approximately conform to the limits above indicated. (See Shales.)

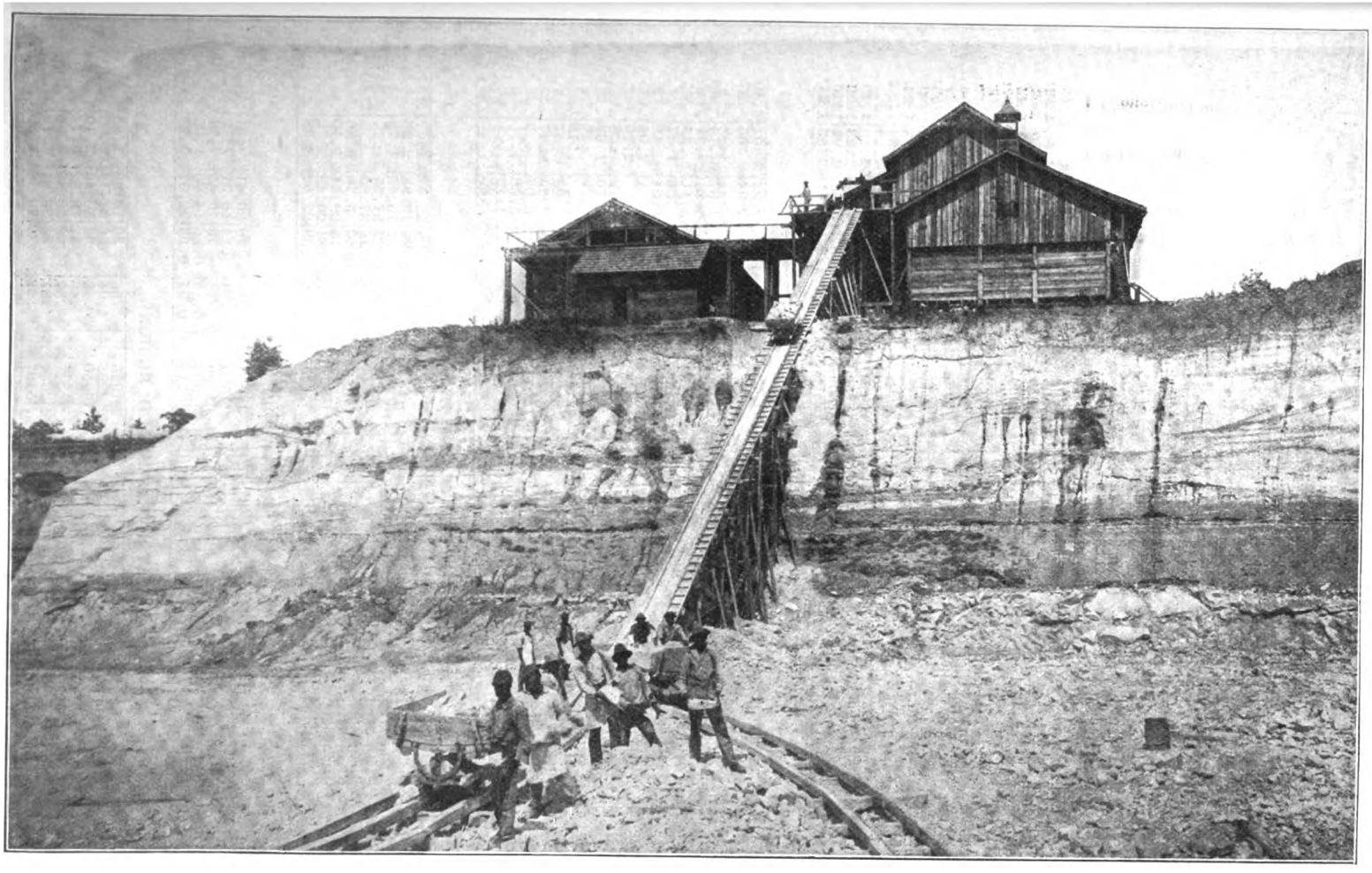
PIPE, TILE AND BRICK CLAYS.

Brick clays occur extensively in South Carolina over the crystalline area as residual, meta-residual and sedimentary deposits. They are distributed over the Coastal Plain as sedimentary beds, and in the case of the lixiviation of argillaceous marls they occur as residual deposits.

Throughout the Piedmont Region the lower grades of clay are found residual to the extent that the altered gneisses, feldspathic schists, etc., have escaped degradation. This degradation, or erosion, has contributed to the formation of higher grade, sedimentary, potters' and pipe clays occurring in the valleys of the crystalline region, and over the area of the Coastal Plain formation.

The sedimentary valley beds of the crystalline formation are the most important sources of supply of these clays in this State. Characteristic of these latter supplies, we find prominent deposits at North Augusta, Brookland, Columbia, Camden, and Society Hill. Above this fall line they occur more or less through the much ramified tributary valleys. Below the fall line the Cretaceous and Eocene formations afford occasional beds answering the requirements of these clays, but in the Coastal Plain area some of the Hampton clays are conspicuously valuable as brick clays. Such deposits extend from Garnett, on the Savannah River, by Walterboro, Summerville, St. Stephens, Marion, and thence to North Carolina, the entire distance affording an undulating zone of detached areas of good clay, some being adapted to the manufacture of high grade face brick.

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CONVEYING KAOLIN TO THE "DRY SHED."

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TABLE No. 1—ANALYSES.

GRANITES.

	COUNTY.	PLACE.	Survey No.	Lime.	Magnesia.	Alumina.	Ferric Oxide.	Ferrous Oxide.
1	Anderson	Pendleton Q.	1335	3.28	1.30	17.22	1.75	2.49
2	Pickens	Beverly Q.	1635	2.80	1.04	14.30	2.44	2.49
3	Laurens	Ware Shoals Q.	5175	2.80	1.45	17.22	1.70	2.67
4	Greenwood	Benjamin Q.	5195	1.28	.78	14.56	1.06	1.62
5	Laurens	High Point Q.	5265	1.64	1.16	15.73	2.14	1.57
6		Praetor Q.	5480	1.70	.86	15.49	1.10	3.73
7		Bates Q.	5482	1.72	.51	13.82	.93	1.43
8	Newberry	Leitzsey Q.	5574	1.82	.75	16.77	.95	1.56
9	Union	Flat Rock Q.	6500	2.14	.48	14.22	1.14	1.24
10	Fairfield		6520	2.40	.63	15.25	1.52	1.53
11	Lexington	Ross Q.	6599	1.88	.84	14.06	.70	1.80
12	York	Whitesides Q.	6615	2.08	.43	14.89	.75	1.24
13	Fairfield	Anderson Q.	6688	1.54	.22	13.72	3.64	....
14	Fairfield	Rion Q.	6740	1.36	.38	15.39	1.24	....
15	York	Jacksons Q.	6810	2.66	.74	15.75	1.16	1.49
16	Kershaw	Richards Q.	7350	1.32	.58	14.51	1.28	1.52
17	Lancaster	Excelsior Q.	7355	1.84	.62	15.76	1.07	1.76
18	Kershaw	Flat Rock Q.	7378	1.64	1.25	15.41	1.85	1.57
19		**LIMESTONES.**						
20	Oconee	Brasstown	1024	28.88	1.32	9.24	.31	2.40
21	Oconee	Hell Hole	1065+5	23.36	15.09	2.34	.55	.57
22	Oconee	Hell Hole	1065+7	.....	.....	.....	.....	.....
23	Oconee	Woodall	1070	30.26	19.71	1.07	.14	.56
24	Oconee	Tomassie Falls	1410	35.72	1.23	6.34	.21	2.40
25	Oconee	Horse Shoe Bn.	1425	32.10	.50	3.11	.33	.35
26	Laurens	Raysors Kiln	5185	45.80	5.86	1.23	1.57	....
27	Laurens	Masters Kiln	5189	35.61	17.30	.24	.18	.21
28	Laurens	Mahaffey Kiln	5240(a)	29.43	18.34	.....	2.08	....
29	Laurens	Mahaffey Kiln	5240(b)	30.46	19.20	.....	2.26	....
30	Union	5MW Cross K.	5675	39.18	14.74	.12	.28	....
31	Cherokee	Thicketty	6121	27.49	15.82	.76	1.03	....
32	Cherokee	Limestone Sp.	6129(a)	30.54	19.60	.....	.26	....
33	Cherokee	Limestone Sp.	6129(c)	43.31	8.75	.....	.75	....
34	Cherokee	Limestone Sp.	6129(d)	48.66	5.60	.23	.47	....
35	Cherokee	Limestone Sp.	6129(e)	54.24	1.16	.23	.47	....
36	Cherokee	Ross Place	6232	26.86	2.39	3.04	.....	....
37	Cherokee		6325	4.28	.51	3.36	.....	....
38	Cherokee	Blacksburg	6329	45.64	1.67	1.12	.....	....
39	Cherokee	Black Fst.	6340	31.10	18.90	.86	.....	....
40		**SLATES AND SCHISTS.**						
41	Richland	Dents Pond	557	0.10	0.25	33.41	1.67	....
42	Kershaw	Rollings Mill	612	.33	.91	16.88	2.26	....
43	Aiken	N. Augusta	2280	.34	.22	15.45	1.79	....
44	Lancaster	Halle Mine	7550(a)	0.20	0.22	31.57	.....	3.55
45	Lancaster	Halle Mine	7550(b)	0.20	0.36	37.65	.....	2.60
46	Lancaster	Halle Mine	7550(c)	0.60	0.50	5.70	6.80	....
47	Lancaster	Blackmon Mine	7527	.96	1.13	28.34	1.10	....
48	Chesterfield	Ruby	7665	0.14	0.81	20.49	2.72	....
49	Chesterfield	Watson Place	7735	.33	.39	23.82	3.38	....
50		**FELDSPARS.**						
51	Oconee	12.5M NE Wal.	1009	.19	.78	20.41	.31	....
52	Oconee	Powder Mill	1520	.14	.14	18.21	.79	....
53	Pickens	Hagood Place	1590	.18	.13	19.45	.71	....
54	Abbeville	W. Abbeville	1925	0.56	0.36	14.90	1.93	....
55	Greenville	Mil. & Teague	5215	0.24	0.23	22.57	0.18	....
56		**CLAYS (CRYSTALLINE REGION).**						
57	Abbeville	Abbeville	1925	.56	.36	14.90	1.93	....
58	Edgefield	Dr. Parker	2225	1.04	.56	21.14	12.02	....
59	Union	Osbourne Place	5950	.46	.54	30.14	2.10	....
60		T. Moore Place	.....	.46	.32	18.82	5.74	....
61	Greenville	R. G. Williams	.....	.57	.09	29.69	3.96	....
62		R. W. Hamilton	.....	.81	.33	26.81	1.79	....
63	Greenwood	W. K. Blake	5197	.62	.30	29.14	3.50	....

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TABLE No. 1—ANALYSES.

GRANITES.

	Titanic Oxide.	Manganese Oxide.	Soda.	Potash.	Carbonic Acid.	Phosphoric Acid.	Sulphuric Radical.	Silica (and Insoluble).	Ignition.	Sundry Components.	Total.
1	.60	trace	5.28	5.14	.....	trace	trace	62.34	.28	.....	99.68
2	.60	.11	3.80	3.84	.....	trace	trace	68.15	.28	.....	99.85
3	.72	trace	3.68	3.80	.....	trace	.08	65.72	.35	.....	100.19
4	.60	trace	3.97	5.37	.....	trace	.06	70.54	.27	.....	100.11
5	.45	trace	3.45	4.54	.....	trace	trace	68.80	.33	.....	99.81
6	.84	trace	3.09	3.36	.....	trace	.13	68.70	.81	.....	99.81
7	.24	trace	3.04	5.06	.....	trace	trace	73.10	.23	.....	100.08
8	.36	trace	3.43	4.10	.....	trace	trace	69.52	.43	.....	99.69
9	.24	trace	5.39	4.82	.....	trace	trace	70.20	.33	.....	100.20
10	.42	trace	4.32	2.85	.....	trace	trace	70.90	.17	.....	99.99
11	.48	.16	3.46	3.94	.....	trace	trace	72.19	.18	.....	99.69
12	.36	trace	4.47	4.70	.....	trace	trace	70.77	.19	.....	99.88
13	.....	.....	5.39	4.98	.....	.....	.....	69.74	.....	.....	99.23
14	.....	.....	.55	6.89	.....	.....	.....	73.26	.....	.....	99.07
15	.36	trace	4.76	3.49	.....	trace	trace	68.90	.18	.....	99.49
16	.24	trace	3.21	4.30	.....	trace	trace	72.22	.52	.....	99.70
17	.45	trace	3.39	4.27	.....	trace	trace	70.11	.45	.....	99.72
18	.60	trace	3.48	4.61	.....	trace	trace	68.71	.34	.....	99.46
19					**LIMESTONES.**						
20	.32	trace	1.36	1.39	22.53	trace	.....	29.95	1.07	.12	99.92*
21	.05	trace	.46	.72	34.22	.15	.....	22.21	.24	.19	100.15
22	.....	.....	.....	.....	.....	.....	.....	9.56	.....	.18	.....
23	.03	trace	.10	.50	44.66	trace	.....	2.91	.24	.13	100.31
24	.22	trace	.71	1.33	28.70	trace	.....	21.10	.09	.07	99.62†
25	.10	trace	.52	.85	24.79	trace	.....	36.55	.05	.....	100.28°
26	.....	.....	.....	.....	38.80	.....	.....	6.75	.....	.....	100.01
27	.01	trace	.02	.05	44.80	trace	.....	1.66	.02	.08	100.18
28	.....	.17	.....	.....	43.23	.....	.....	6.63	.09	.07	100.04
29	.....	.45	.....	.....	44.71	.....	.....	2.45	.14	.03	99.70
30	trace	trace	.02	.01	44.40	trace	.....	1.13	.12	.....	100.00
31	.....	.24	.....	.....	35.71	.05	.....	18.42	.42	.....	99.94
32	.....	trace	.....	.....	45.58	.....	.....	3.59	.23	.02	99.82
33	.....	.....	.....	.....	44.17	.....	.....	2.86	.....	.03	99.87
34	trace	trace	.08	.01	43.52	trace	.....	1.28	.12	.06	100.03
35	trace	trace	.02	.01	43.27	trace	.....	.71	.11	.02	100.24
36	.....	.....	.....	.....	22.09	.....	.....	45.36	.09	.....	99.85
37	.....	.....	.....	.....	3.59	.....	.....	88.09	.03	.....	99.94
38	.....	.....	.....	.....	37.01	.....	.....	14.44	.21	.....	100.11
39	.....	.....	.....	.....	45.00	.....	.....	3.95	.01	.....	99.87
40					**SLATES AND SCHISTS.**						
41	0.37	.....	0.12	0.66	.....	.....	.....	53.19	10.63	.....	100.40
42	.....	.....	.08	3.17	.....	.....	.....	72.37	3.84	.....	99.84
43	.56	.....	.27	.96	.....	.....	.....	75.20	5.23	.....	100.02
44	.....	.16	6.96	6.97	.....	.....	.....	44.61	.....	5.80	100.04
45	.....	.....	4.60	3.71	.....	.....	.....	45.52	.....	5.35	99.99
46	.....	.....	0.80	.....	.....	.....	.....	80.00	5.00	0.60	100.00
47	.29	trace	.49	6.52	.....	trace	.....	57.26	3.54	.....	99.63
48	1.12	.....	0.09	2.55	.....	.....	.....	67.38	5.08	.....	100.38
49	1.19	.....	.72	1.43	.....	.....	.....	61.62	7.58	.....	100.46
50					**FELDSPARS.**						
51	trace	.....	1.41	12.71	.....	.....	.....	62.26	1.43	.11	99.61
52	trace	.....	2.41	11.14	.....	.....	.....	67.30	.06	.....	100.19
53	trace	.....	2.02	11.34	.....	.....	trace	65.60	.63	.....	100.06
54	.....	.....	3.21	4.16	.....	.....	.....	72.81	1.99	.....	99.92
55	.....	.....	2.72	11.01	0.09	.....	trace	60.79	1.90	.....	99.73
56					**CLAYS (CRYSTALLINE REGION).**						
57	.....	.....	3.21	4.16	.....	.....	.....	72.81	1.99	.....	99.92
58	1.47	.....	1.12	.95	.....	.....	.....	52.41	8.95	.....	99.66
59	.....	.....	.12	.87	.....	.....	.....	54.40	11.37	.....	100.00
60	.....	.....	.....	.....	.....	.....	.....	60.90	12.33	.....	100.00(a)
61	.....	.....	.....	.....	.....	.....	.....	54.69	10.43	.....	100.00(b)
62	.....	.....	.....	.....	.....	.....	.....	52.46	14.42	.....	100.00(c)
63	.....	.....	.16	.66	.....	.....	.....	54.40	11.72	.....	100.50

*FeS2 1.03, † FeS2 1.50, °FeS2 1.03, (a) F2S2 1.43, (b) FeS2 .57, (c) F2S2 3.36.

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TABLE No. 2—ANALYSES.

MARLS (TERTIARY).

	COUNTY.	PLACE.	Survey No.	Lime.	Magnesia.	Alumina.	Ferric Oxide.	Ferrous Oxide.
1	Aiken	Kennedy Bluff	42(c)	33.69	.29	.22	1.07	....
2	Aiken	Kennedy Bluff	42(d)	15.43	.32	.61	1.82	....
3	Barnwell	Baldock	54	35.51	.82	.24	1.51	....
4	Bamberg	Lemon Swamp	339	41.83	.70	1.17	1.08	....
5	Bamberg	Binnakers Brg.	342(c)	17.08	.50	2.45	2.63	....
6	Orangeburg	12MW Orange	347	34.82	.64	.42	.56	....
7	Orangeburg	Jenkins Hill	349	52.85	.88	.38	.96	....
8	Barnwell	Allendale	353	52.32	.85	.17	.28	....
9	Hampton	Gifford	355(c)	1.46	.24	.51	3.92	....
10	Bamberg	Box Branch	360	25.44	.33	.44	.63	....
11	Dorchester	Utseys Bluff	361	33.46	.22	.....	.....	.....
12	Colleton	Mingo Hill	362	11.88	.71	.51	.98	....
13	Colleton	Stokes Brg.	365	10.51	3.53	1.47	4.06	....
14	Dorchester	Scotchmans Bl.	369	15.23	.31	.76	1.42	....
15	Dorchester	Four Hole Sw.	370	49.08	.67	.13	.52	....
16	Colleton	Givham's Ferry	373(b)	32.91	.56	1.29	.79	....
17	Colleton	Givham's Ferry	373(c)	51.63	.65	.38	.63	....
18	Colleton	Givham's Ferry	373(d)	31.45	12.98	1.65	.92	....
19	Colleton	Givham's Ferry	373(e)	32.31	1.89	.95	.63	....
20	Colleton	Owens Place	395(b)	50.20	.....	.....	.....	.....
21	Berkeley	Ingleside	402	.....	.....	.....	.....	.....
22	Dorchester	Ashley Works	405(d)	48.80	.....	1.11	.95	....
23	Dorchester	Ashley Works	405(e)	43.41	.31	1.88	.95	....
24	Dorchester	Ashley Works	405(f)	41.80	1.20	2.74	1.10	....
25	Dorchester	Ashley Works	405(g)	44.84	1.29	2.20	.63	....
26	Dorchester	Bees Ferry	410(b)	6.10	.20	7.11	2.36	....
27	Charleston	Bees Ferry	410(c)	29.44	.65	.....	.....	.....
28	Berkeley	Wadboo River	419	45.38	.38	.50	1.34	....
29	Berkeley	Steep Bluff	421	45.68	.43	1.34	.79	....
30	Berkeley	Wappaoolah P.	428	.....	7.02	.....	.....	.....
31	Berkeley	Smith Place	441	47.86	.52	.43	.32	....
32	Berkeley	Near Saxon	441½	26.80	3.91	.83	1.38	....
33	Charleston	5MN Cherokee M.	456(b)	44.88	1.09	.63	2.07	....
34	Orangeburg	Creston	697	44.90	1.38	2.39	2.27	....
35	Orangeburg	Cave Hall	699	51.40	.78	.38	1.70	....
36	Orangeburg	Poplar Creek	701	42.76	1.05	.82	4.22	....
37	Berkeley	Pond Bluff	713(b)	53.41	.26	.05	.71	....
38	Berkeley	Pond Bluff	713(c)	53.44	.22	.92	.81	....
39	Georgetown	Lenuds Ferry	740(b)	50.76	.87	.68	.79	....
40	Georgetown	Lenuds Ferry	740(c)	48.30	1.02	.52	.92	....
41	Sumter	Muldrow	838	40.60	.26	.21	.63	....
42	Florence	Myers Well	859	18.28	.26	1.42	1.65	....
43	Florence	Bostick	863	36.75	.39	.59	.71	....
44	Horry	Grahamville	943	36.89	.22	.26	1.10	....
45	Horry	Bucksport	952	22.60	.09	1.83	.....	....
46	Horry	Myrtle Beach	953	34.50	.20	.....	.....	....

47 GLAUCONITIC MARLS (TERTIARY).

48	Hampton	Mauldin	355	10.34	1.55	2.86	2.52	....
49	Colleton	Givham Fy. Rd.	395(a)	11.43	.54	11.21	.....	....
50	Dorchester	Bees Ferry	410(b)	6.10	.20	7.11	2.36	....
51	Orangeburg	Half Way Sw.	688	.44	2.23	8.11	16.35	.48
52	Orangeburg	Creston	696	.84	2.00	8.06	12.55	1.24
53	Berkeley	Lenuds Ferry	739(b)	4.05	3.13	8.47	13.83	....

54 MARLS (CRETACEOUS).

55	Darlington	Floyds Mill	825(c)	.70	.42	18.03	.....	....
56	Florence	Georgetown Rd.	850	46.82	.15	.41	.94	....
57	Florence	Burches Ferry	855(d)	17.59	.24	1.52	1.73	....
58	Florence	Burches Ferry	855(e)	3.38	2.59	13.88	2.05	3.11
59	Florence	Cains Lndg.	858(f)	35.00	.....	.....	.....	.....
60	Florence	Cains Lndg.	858(a)	15.60	1.51	11.54	4.32	....
61	Florence	Bigham Branch	860	20.69	.97	10.97	3.32	....
62	Florence	Allisons Lndg.	870(e)	29.21	.....	.....	.....	....
63	Florence	Allisons Lndg.	870(d)	42.43	.....	.....	.....	....
64	Horry	Grahamville	943	23.77	.43	.80	1.73	....
65	Florence	Ards Bluff	995	4.00	1.10	9.27	.35	3.11

66 MARLS (PLEISTOCENE).

67	Charleston	Stono River	457	1.00	.91	11.79	6.34	....

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TABLE No. 2—ANALYSES.

MARLS (TERTIARY).

	Titanic Oxide.	Manganese Oxide.	Soda.	Potash.	Carbonic Acid.	Phosphoric Acid.	Sulphuric Radical.	Silica (and insoluble).	Ignition.	Sundry Components.	Total.
1	.....	.24	.....	.....	25.84	.26	.....	36.67	1.33	.....	99.61
2	.....	.19	.....	.....	11.64	.15	trace	67.41	1.94	.....	99.51
3	.....	.12	.....	.....	28.01	.20	trace	32.07	1.06	.....	99.54
4	.....	.19	.....	.....	32.36	.20	.....	20.64	1.28	.....	99.45
5	.....	trace	.....	.....	13.18	trace	trace	58.21	2.77	3.35	100.17
6	.....	.....	.....	.....	27.78	.06	.28	34.71	.49	.....	99.76
7	.....	.....	.....	.....	42.10	.06	.14	2.56	.14	.....	100.07
8	.....	.14	.....	.....	41.13	.09	.....	4.27	.23	.....	99.48
9	.....	.....	.....	.24	.82	.....	.....	91.01	1.40	.....	99.60
10	.....	.....	.19	.07	19.40	.75	.42	49.77	1.86	.70	100.00
11	.....	.....	.....	.....	24.52	.58	.....	.....	.....	.....	.....
12	.....	.....	.19	.06	8.97	1.12	.19	73.64	.43	1.07	99.75
13	.....	.....	.39	.25	8.59	3.32	.86	62.12	1.39	3.31	99.80
14	.....	.....	.30	.07	11.24	1.03	.19	68.53	.10	.33	99.51
15	.....	.25	.....	.....	38.06	.30	.....	9.86	.71	.....	99.58
16	.....	.....	.....	.....	25.60	.92	.....	35.71	1.52	.20	99.50
17	.....	.....	.....	.....	40.71	.59	.....	5.19	.38	.04	100.20
18	.....	.....	.....	.....	37.97	1.08	.....	11.76	.68	1.58	100.07
19	.....	.....	.39	.11	26.30	1.03	.36	33.32	1.54	1.10	99.93
20	.....	.....	.....	.....	.74	.....	.....	6.58	.....	.97	.....
21	.....	.....	.....	.....	.....	.....	.....	13.42	.....	.....	.....
22	.....	.....	.....	.....	34.50	4.13	.....	8.56	.62	1.19	99.86
23	.....	.....	.....	.....	32.79	1.76	.....	15.45	1.68	1.29	99.52
24	.....	.....	.....	.....	33.74	.45	.....	15.61	1.31	2.46	100.41
25	.....	.....	.....	.....	36.49	.16	.....	11.69	.95	1.58	99.83
26	.....	.....	.....	.....	1.60	3.66	.....	73.13	2.96	2.75	99.87
27	.....	.....	.....	.....	16.29	7.00	.58	.....	.....	.....	.....
28	.....	.....	.41	.30	35.13	1.00	.....	12.76	1.46	.85	99.51
29	.....	.....	.35	.32	35.17	1.29	.....	12.80	.91	.96	100.04
30	.....	.....	.....	.....	.....	.....	.....	12.90	.62	.....	.....
31	.....	.....	.....	.....	37.50	.71	.....	10.33	1.13	1.19	99.99
32	.....	.29	.39	.21	88	3.03	.34	37.06	1.65	2.07	99.63
33	trace	trace	.18	.27	29.30	5.15	1.50	14.07	.17	1.07	100.38
34	.....	.....	.43	.31	36.44	.14	.11	8.80	.66	1.84	99.97
35	.....	.....	.22	.23	40.92	0.20	0.06	3.09	.13	.77	99.88
36	.....	.....	.51	.48	30.09	2.98	3.12	11.98	.35	1.20	99.56
37	.....	.....	.11	.08	42.06	.08	.22	1.92	.65	.39	99.64
38	.....	.....	.18	.07	42.02	.16	.11	1.71	.39	.39	100.42
39	.....	.....	.....	.....	40.39	.47	.....	5.55	.22	.29	100.02
40	.....	.....	.....	.....	38.76	.32	.....	8.73	.77	.17	99.51
41	.....	.....	.39	.07	31.59	.39	.39	23.57	1.27	.56	99.93
42	.....	.....	.21	.35	14.33	.34	.....	60.06	.77	2.26	99.93
43	.....	.....	.26	.18	28.77	.50	.....	24.59	.31	6.76	99.81
44	.....	.....	.60	.21	28.79	.24	.38	30.18	.22	.85	99.94
45	.....	.....	.....	.....	17.66	.04	.28	55.60	1.32	.75	99.93
46	.....	.....	.....	.....	26.67	.51	.28	.....	.....	.....	.....
47	GLAUCONITIC MARLS (TERTIARY).										
48	.45	trace	1.25	1.16	.56	6.61	3.02	65.06	2.18	2.57	100.13
49	.....	.....	.....	.....	.....	7.83	.....	57.27	7.49	4.18	99.95
50	.....	.....	.....	.....	1.60	3.66	.....	73.13	2.96	2.75	99.87
51	.....	.25	2.83	.....	.....	.51	.....	53.22	5.78	9.78	99.98
52	.80	.....	.49	3.91	.35	.05	.21	58.08	5.15	6.76	99.99
53	.....	.....	.53	3.28	5.49	1.21	.....	50.47	2.01	7.71	100.18
54	MARLS (CRETACEOUS).										
55	1.70	.....	.67	1.27	.....	.....	.....	66.27	6.16	.....	100.37
56	.....	.....	.69	.28	36.47	.27	.41	12.45	.50	.51	99.90
57	.....	.....	.48	.43	13.15	.48	.88	59.30	2.04	2.49	100.33
58	.60	trace	.65	1.49	1.53	trace	2.52	48.09	5.18	14.78	99.85
59	.....	.....	.....	.....	27.08	.43	.....	.....	.....	.....	.....
60	.66	trace	.54	1.42	11.24	trace	1.29	44.00	2.81	4.84	99.77 W
61	trace	.....	.83	1.67	15.64	.27	.38	39.87	2.19	.....	99.64
62	.....	.....	.....	.....	22.68	.28	.....	.....	.....	.....	.....
63	.....	.....	.....	.....	32.76	.61	.....	.....	.....	.....	.....
64	.....	.....	.42	.28	18.53	.47	.35	51.63	.13	1.12	99.66
65	.96	trace	1.11	2.27	.80	.10	2.95	70.12	1.10	2.83	100.07
66	MARLS (PLEISTOCENE).										
67	.36	.....	1.19	2.19	.06	.10	.47	66.52	3.42	5.20	100.21

W Iron Sulphide 2.84.

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TABLE No. 8—ANALYSES.

FULLERS EARTH.

	COUNTY.	PLACE.	Survey No.	Lime.	Magnesia.	Alumina.	Ferric Oxide.	Ferrous Oxide.
1	Aiken	3 Corn'd Pond	262	1.01	.64	14.92	4.01	....
2	Beaufort	Coosaw Road	486(a)	3.32	trace	9.12	5.02	....
3	Beaufort	Coosaw Road	486(b)	1.15	trace	3.05	4.71	....
4	Beaufort	Whatley Place	496(a)	2.61	trace	10.02	4.24	....
5	Beaufort	Whatley Place	496(b)	2.02	.....	10.15	3.14	....
6	Lexington	Martin Est.	505	3.12	2.01	7.66	1.93	....
7	Orangeburg	Rucker Place	522	.16	.72	9.91	2.83	....
8	Clarendon	Manning Manor	685(b)	.37	.42	4.83	2.81	....
9	Clarendon	Manning Manor	685(c)	.82	.41	10.10	5.81	....
10	Darlington	Black Crk. Val.	827	.67	2.01	11.16	6.92	....
11	Williamsburg		892	1.54	.67	2.88	2.22	....
12	Clarendon	Deep Creek	929	.58	1.05	10.70	2.57	....
13		CLAYS (CRETACEOUS).						
14	Aiken	McNamee Place	100	.03	.07	38.98	.77	....
15	Aiken	Beech I. Ridge	150	.12	trace	38.92	2.31	....
16	Aiken	Beech I. Ridge	155	.08	trace	37.90	2.53	....
17	Aiken	Harrigals	168	.....	.....	35.49	1.11	....
18	Aiken	Aiken	175	.....	.....	35.56	2.47	....
19	Aiken	Cemetery Hill	180	.32	.25	31.49	2.44	....
20	Aiken	Cemetery Hill	181	.14	.19	27.44	1.60	....
21	Aiken	McMillan Place	195	.06	trace	38.12	1.75	....
22	Aiken	Beech I. Ridge	205	.....	.50	37.36	.91	....
23	Aiken	Langley Mfg. Co.	210	.16	.25	35.61	2.21	....
24	Aiken	Cooks Brg.	260	.14	trace	38.19	1.55	....
25	Lexington	Keesler Place	275	.19	.24	26.62	1.89	....
26	Aiken	Trenholm Est.	295	trace	trace	36.08	1.02	....
27	Aiken	Seivern	300	trace	.....	37.47	1.01	....
28	Lexington	Sand Dam Ridge	315	.02	.03	38.69	1.28	....
29	Lexington	Geiger Place	515	.11	.12	38.78	1.15	....
30	Richland	Killian	550	.80	.78	36.94	2.64	....
31	Richland	Killian	551	1.59	1.51	23.82	2.94	....
32	Richland	Garner Fy. Rd.	565	.18	.16	34.38	1.91	....
33	Richland	Congaree Stat.	570	.06	.07	38.96	.93	....
34	Richland	Jumping Run	590	.07	.11	37.26	1.26	....
35	Kershaw	Smithville Rd.	645	.22	.13	36.83	2.60	....
36		Pine Tree Crk.	655	.....	.....	30.50	1.72	....
37	Orangeburg	Creston	696	.44	.12	30.98	3.90	....
38	Chesterfield	Cobert Hill	785	.16	.23	32.32	1.23	....
39	Chesterfield	Sugar Loaf Mt.	795	.26	.....	23.88	1.02	....
40	Darlington	Evans Mill	820	.37	.27	29.23	3.07	....
41		CLAYS (PLEISTOCENE).						
42	Hampton	Youmans Place	75	.04	1.33	24.87	1.79	....
43	Hampton	Robert Place	76	.32	.14	20.15	5.22	....
44	Colleton	Walterboro	270	.22	trace	14.36	3.04	....
45	Dorchester	Summerville	400	.20	trace	24.83	2.34	....

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TABLE No. 8—ANALYSES.

FULLERS EARTH.

	Titanic Oxide.	Manganese Oxide.	Soda.	Potash.	Carbonic Acid.	Phosphoric Acid.	Sulphuric Radical.	Silica (and Insoluble).	Ignition.	Sundry Components.	Total.	
1	.....	.....	Undt	Undt	.....	.....	.....	73.84	4.00	.....	98.42	
2	.....	.....	.....	.....	2.80	.....	.....	64.35	5.25	9.17	99.03	
3	.....	.....	.....	.....	.97	.....	.....	77.17	4.17	8.16	99.38	
4	.....	.....	.....	.....	2.20	.....	.....	64.05	6.03	9.93	99.08	
5	.....	.....	.....	.....	1.69	.....	.....	67.62	5.86	8.90	99.38	
6	.....	.....	.....	.....	.....	.....	.....	81.65	3.58	.....	99.95	
7	.97	.....	Undt	Undt	.....	.....	.....	78.19	6.54	.....	99.32	
8	.....	.....	.....	.....	.....	.....	.....	86.80	4.63	.....	99.86	
9	.....	.....	.....	.....	.....	.....	.....	78.64	3.20	.....	98.98	
10	.....	.....	.....	.....	.....	.....	.....	58.31	20.08	.....	99.15	
11	.18	.....	.66	.50	.....	.25	.90	86.35	4.15	.....	100.30	X
12	.55	.....	.23	1.21	.....	.....	.....	79.43	3.94	.....	100.26	
13					CLAYS (CRETACEOUS).							
14	.85	.....	.55	.26	.....	.....	.....	45.02	13.58	.....	100.11	
15	1.21	.....	.26	.30	.....	.....	.....	44.23	12.90	.....	100.25	
16	1.29	.....	.41	.36	.....	.....	.....	44.66	13.17	.....	100.40	
17	.43	.....	.63	.50	.....	.....	.....	48.95	12.97	.....	100.08	
18	.94	.....	.74	.13	.....	.....	.....	47.49	12.86	.....	100.19	
19	1.20	.....	1.01	.63	.....	.....	.....	50.87	11.42	.....	99.63	
20	1.82	.....	2.51	.33	.....	.....	.....	55.61	10.39	.....	100.03	
21	1.11	.....	.41	.32	.....	.....	.....	44.51	13.45	.....	99.73	
22	.....	.....	.....	2.00	.....	.....	.....	43.18	14.32	.....	98.27	
23	1.56	.....	1.37	1.10	.....	.....	.....	45.07	12.39	.....	99.72	
24	1.30	.....	0.53	0.50	.....	.....	.....	44.11	13.37	.....	99.69	
25	.91	.....	.97	.67	.....	.....	.....	60.21	8.58	.....	100.28	
26	.86	.....	1.09	.20	.....	.....	.....	46.99	13.82	.....	100.06	
27	1.44	.....	.69	.08	.....	.....	.....	45.69	13.98	.....	100.36	
28	1.00	.....	.52	.37	.....	.....	.....	45.10	13.52	.....	100.53	
29	.98	.....	.48	.23	.....	.....	.....	45.44	12.86	.....	100.15	
30	.....	.....	.....	.....	.....	.....	.....	42.30	15.43	.....	100.00	
31	.....	.....	.....	.....	.....	.....	.....	57.30	11.84	.....	100.00	Y
32	1.10	.....	.21	.20	.....	.....	.....	49.31	12.52	.....	99.97	
33	.98	.....	.55	.19	.....	.....	.....	45.72	13.05	.....	100.51	
34	1.07	.....	.63	.10	.....	.....	.....	47.78	12.29	.....	100.57	
35	.....	.....	Undt	Undt	.....	.....	.....	47.46	12.97	.....	100.21	
36	.....	.....	Undt	Undt	.....	.....	.....	57.65	8.85	.....	100.00	
37	0.61	.....	.72	.15	.....	.11	.03	51.19	11.95	.....	100.20	
38	1.27	.....	.56	.28	.....	.....	.....	55.02	9.27	.....	100.34	
39	.....	.....	.....	.....	.....	.....	.....	66.06	8.10	.....	100.00	Z
40	1.48	.....	.73	.98	.....	.....	.....	53.87	10.28	.....	100.28	
41					CLAYS (PLEISTOCENE).							
42	1.32	.....	.72	.72	.....	.....	.....	60.33	8.77	.....	99.89	
43	.81	.....	1.08	1.08	.....	.....	.....	64.22	7.36	.....	100.38	
44	.....	.....	.06	2.14	.....	.....	.....	73.80	6.31	.....	99.93	
45	.....	.....	trace	1.89	.....	.....	.....	61.15	9.78	.....	100.19	

X Moisture 4.12, Y Undt. 1.00, Z Undt. 0.68.

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OUTLINE GEOLOGICAL MAP OF SOUTH CAROLINA

CRYSTALLINE AREA
(TENTATIVE)

SOUTH CAROLINA GEOLOGICAL SURVEY
EARLE SLOAN
STATE GEOLOGIST
1906

ECONOMIC MINERAL DEPOSITS	ZONE
Gold, Lead, Soapstone, Graphite, Mica, Feldspar, Corundum.	CHATOOGA
Gold, Graphite, Limestone.	CHAUGA
Granite.	TUNNEL HILL
Marble, Limestone.	POOR MT.
Monazite, Corundum, Granite.	OCONEE CREEK
Gold, Iron, Serpentine, Soapstone, Asbestos, Mica, Feldspar, Corundum, Uranitite, Granite.	SALUDA
Gold, Iron, Graphite, Mica, Soapstone, Granite, Kaolin.	TYGER
Gold, Tin, Lead, Iron, Soapstone, Asbestos, Graphite, Monazite, Mica, Feldspar, Corundum, Beryl, Amethyst, Zircon, Garnet, Columbite, Granite, Peat, Kaolin, Clay.	ANDERSON-SPARTANBURG
Gold, Nickel, Copper, Manganese, Iron, Pyrite, Serpentine, Soapstone, Barytes, Monazite, Corundum, Granite, Syenite, Trap, Porphyry, Quartzite, Quartz, Felsite (Road Metal), Abrasive Sands.	ABBEVILLE-YORK
Gold, Soapstone, Granite, Slate, Sericite-Clays.	EDGEFIELD-CHESTERFIELD
Granite, Kaolinized Schists.	VAUCLUSE
Gold, Lead, Specular Iron, Siderite, Hematite, Magnetite, Limestone, Dolomite, Marble, Flagstone, Quartzite.	CHEROKEE
Sandstone.	HORNSBORO

OCONEE · PICKENS · GREENVILLE · SPARTANBURG · CHEROKEE · ANDERSON · ABBEVILLE · LAURENS · UNION · YORK · GREENWOOD · NEWBERRY · CHESTER · SALUDA · EDGEFIELD · FAIRFIELD · LANCASTER · AIK · LEXINGTON · KERSHAW · CHESTERFIELD

CHEROKEE ZONE · HORNSBORO ZONE

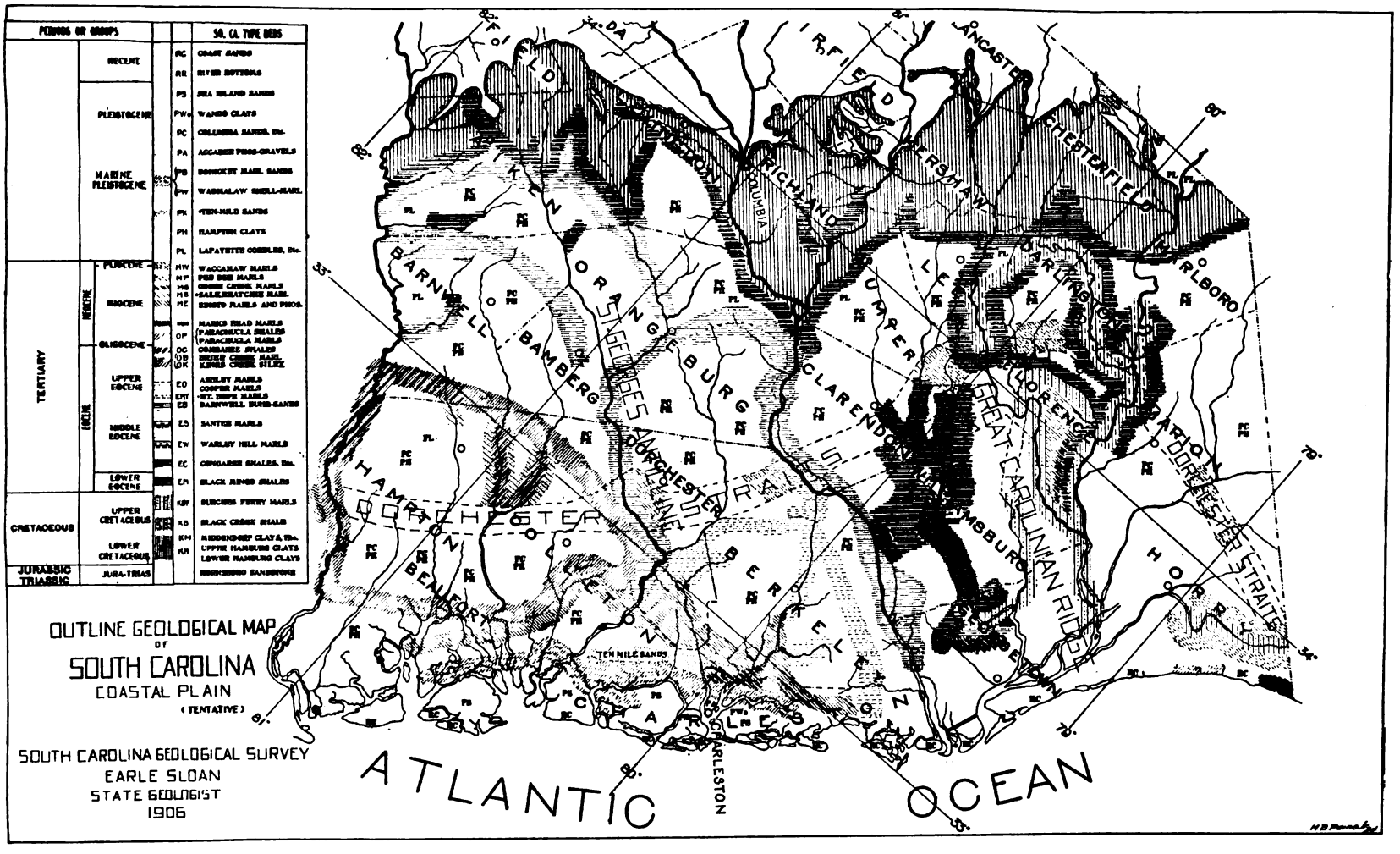
35° 83° 82° 81° 34° 82° 35° 80° 80°

CRYSTALLINE AREA

PETROGRAPHIC ZONES		SYMBOL	
PALEOZOIC?	POOR MT.	€	CHEROKEE UPPER
	CHAUGA	€	CHEROKEE LOWER
		A	EDGEFIELD-CHESTERFIELD
			VAUCLUSE
			ABBEVILLE-YORK
ARCHEAN	*SALUDA	AR	
	TUNNEL-HILL	AR	
	OCONEE-CREEK	AR	
	CHATOOGA	AR	
	TYGER	AR	

ANDERSON-SPARTANBURG (ARc)

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MINING REVIEW FOR 1906

STRUCTURAL MATERIALS

GRANITE.

DIMENSION AND FINISHED STONE.

The fine grained blue and gray monumental granite from the Anderson Quarry, and the medium grained structural granite from the Rion Quarry, continue the most prolific sources of these grades which are supplied by the Winnsboro Granite Company of Rockton, S. C.

The Excelsior Granite Company of Heath Springs, S. C., supplies a large demand for a superior fine grained granite for monumental work.

The Leitzsey Quarry, through S. M. Speers, of Newberry, S. C., regularly supplies a fine grained gray granite in dimension and finished form.

The Benjamin Quarry, at Quarry, S. C., supplies an attractive grade of "Scotch" monumental granite.

The Keystone Granite Company's quarry, and the Pacolet Granite Company's quarry, both of which are located near Pacolet, S. C., have had their output curtailed through temporary litigation.

CURBING, LINTELS, JAMBS, ETC.

The Entrekin Quarry Company of Graycourt, S. C., and the W. Y. Fair Quarry at High Point, S. C., continuously supply these grades.

PAVING BLOCKS, JETTY STONE, ROAD METAL OR BALLAST.

The Rion Quarry of the Winnsboro Granite Company supplies a very superior grade of paving blocks. The Edgefield Quarry at Edgefield, S. C., the Beverly Bros'. Quarry at Beverly, S. C., and the Lipscomb Quarry at Columbia, S. C., supply large quantities of Jetty Stone and Road Metal. The Winnsboro Granite Company furnishes large quantities of crushed stone from its waste products.

The Townes-Cothran granite property near Greenville, S. C., is being extensively opened with a view to supplying railway ballast and dimension stone.

LIMESTONE, MARBLE.

The Limestone Springs Lime Works Quarry at Limestone Springs (Gaffney, S. C.), yields large quantities of limestone and some structural marble. The limestone is chiefly utilized in the production of lime; the equipment includes six large modern kilns. The Ettres and the Hardin Quarries and Kilns near Blacksburg, S. C., and the Master's Quarry and Kiln near Ware Shoals, S. C., are intermittently operated. (Value of lime produced 1906, $34,719.)

ROAD-BUILDING MATERIALS.

The Aiken-Leak Chert (felsite) Quarry near Abbeville supplies road metal chiefly for Abbeville County roads. Nearly all the granite quarries supply crushed stone from their waste products.

Granite quarries in the Counties of Greenville, Spartanburg, Union, and Chester are operated by municipal or county authorities to supply road metal for streets and country roads.

LIST OF GRANITE QUARRIES REGULARLY OPERATED.

Survey No.	Quarry.	Address.
1635	Beverly Quarry	Beverly, S. C.
2250	Edgefield Quarry	Edgefield, S. C.
5265	High Point Quarry	High Point, S. C.
5574	Leitzsey Quarry	Newberry, S. C.
5650	Entrekin Quarry	Graycourt, S. C.
6597	Lipscomb Quarry	Columbia, S. C.
6688	Winnsboro Granite Company Quarry	Rockton, S. C.
6740	Winnsboro Granite Company Quarry	Rockton, S. C.
7355	Excelsior Granite Company Quarry	Heath Springs, S. C.

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LIST OF GRANITE QUARRIES INTERMITTENTLY OPERATED.

Survey No.	Quarry.	Address.
1096	Westminster Quarry	Westminster, S. C.
1306	Shelor Quarry	Walhalla, S. C.
1335	Pendleton Quarry	Pendleton, S. C.
1872	Bordeaux Quarry	Bordeaux, S. C.
5195	Benjamin Quarry	Quarry, S. C.
5203	Bauman Quarry	Greenville, S. C.
5482	Bates Quarry	Batesburg, S. C.
6075	Keystone Quarry	Spartanburg, S. C.
6078	Johnson Quarry	Pacolet, S. C.
6520	Blairs Quarry	Blairs, S. C.
6530	Strothers Quarry	Strothers, S. C.
6605	Bowling Green Quarry	Bowling Green, S. C.
6615	Whitesides Quarry	Yorkville, S. C.
6626	Happerfield Quarry	Yorkville, S. C.
6690	Leiper Davis Quarry	Columbia, S. C.
7645	Oro Quarry	Chesterfield, S. C.

(Value of stone marketed 1906, $258,398.00.)

II.—NON-METALLIC GROUP

MONAZITE.

While a few regularly organized companies systematically mine monazite, the greater portion of this mineral is supplied to the magnetic concentrators by numerous individuals, who operate irregularly, some of whom own producing properties, while others work properties to the owners of which they pay royalties, the usual rate being one-sixth of the output. Monazite is mined extensively in both Greenville and Cherokee Counties, and subordinately in Spartanburg and Anderson Counties, but the magnetic concentrators and purchasing agencies are centered at Gaffney, S. C.

LIST OF MONAZITE AGENCIES IN SOUTH CAROLINA.

Carolina Monazite Company, concentrating plant, M. E. Gettys, Agent, Gaffney, S. C.

German Monazite Company, concentrating plant, Geo. L. English, Agent, Shelby, N. C.

Weatheral Separating Company, 68 Broadway, New York. J. V. Welchel, Agent, Gaffney, S. C.

(Value Monazite produced 1906, $43,000.)

MICA AND FELDSPAR.

These minerals are mined in Greenville County by Miller and Teague, of Piedmont, S. C. The mine was opened during the latter part of 1906, and produced mica of the approximate value of $1,000.00 in the course of exploration, incident to which good bodies of high grade mica and feldspar were exposed.

The opening during December, 1906, of an exploratory shaft on the G. W. Chapman property (Sur. No. 5225), afforded some good mica and revealed a good prospect.

III.—METALLIC GROUP

GOLD.

The Haile Gold Mining Company of Kershaw, S. C., continued the largest individual producer of Gold east of the Mississippi River; during some years their output (varying from $70,000 to $150,000), exceeds the aggregate output of any of the Eastern States, apart from South Carolina.

The Blackmon Mine of the Piedmont Development Company (Kershaw, S. C.), was a regular producer during the year 1906.

The Magnolia, Brown, and Schlegel Milch Mines of Hickory Grove, S. C., and the Darwin, and Love Mines of the King's Creek Station section, the Brassington Mine near Kershaw, S. C., and the Ophir Mine near Glenn Springs, S. C., were irregular producers of gold during 1906. The Gregory placer deposit near Jefferson, S. C., was worked intermittently. The aggregate output for the year 1906 comprised 3,819.63 ounces (reported to U. S. Geol. Survey), valued at $78,959.00.

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TIN.

The Ross Tin Mine, owned by Capt. S. S. Ross, Gaffney, S. C., is the only property in South Carolina which afforded tin ore during the year 1906. In the course of limited exploration below the 61-foot level, during the year 1906, about thirty tons of cassiterite (Tin ore) were accumulated. This ore affords about 70 per cent. of metallic tin singularly free from objectionable associate metals. It commands an eager market at Haile, Cornwall, England.

(Tin ore produced 1906, $16,800.)

Nickel, Copper and Gold at the Culbreath Mine, and Manganese at the Dorn Mine were objects of limited explorations during the latter part of 1906.

COASTAL PLAIN

MARL.

The Ingleside Mining and Manufacturing Company of Charleston, S. C., mined and calcined marl and shipped 2,100 short tons of lime ("marl") during the year 1906; valued at $9,450.00.

The Ashley Marl Plant (V.-C. C. Co.), does not appear to have been operated during 1906.

FULLERS EARTH.

The National Earth Company of Sellers, S. C., completed a plant near Salters for supplying Fullers Earth during 1906.

PHOSPHATE ROCK.

List of Miners of "Land Rock" During 1906.

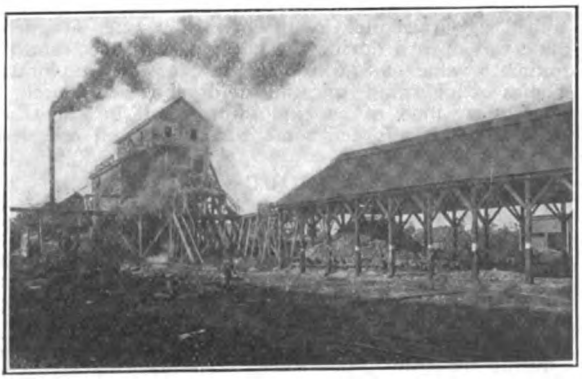
Charleston Mining and Manufacturing Company, Charleston, S. C.
Bolton Mines Company, Charleston, S. C.
Bradley (P. B. & R. S.), Charleston, S. C.
Runnymede Phosphate Company, Charleston, S. C.

List of Miners of River Rock During 1906.

Central Phosphate Company, Beaufort, S. C.
Stono Mines, Charleston, S. C.

Total production of Phosphate Rock during the year 1906: Long tons, 223,675; valued at $5.00 per ton f. o. b., $1,118,375.00.

Owners of Fertilizer Plants With Acid Chambers.



PHOSPHATE WORKS AT PON PON.

Anderson Oil and Fertilizer Company, Anderson, S. C.

Ashepoo Fertilizer Company, Charleston, S. C.

Etiwan Fertilizer Company, Charleston, S. C.

Read Phosphate Company, Charleston, S. C.

Royster (F. S.) Guano Company, Columbia, S. C.

Virginia-Carolina Fertilizer Company, Charleston, S. C. (7 plants); Blacksburg, S. C. 1 plant); Columbia, S. C. (2 plants); Greenville, S. C. (1 plant); Pon Pon, S. C. (1 plant); Port Royal, S. C. (1 plant).

The South Carolina Fertilizer plants (with acid chambers) represent an aggregate capacity slightly exceeding 500,000 tons. During 1906 the marketed product represented an approximate value of $7,945,955.

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CLAYS.

Sedimentary Kaolin, or Ball Clay, and Fire Clay.

List of Mining Plants in South Carolina.

Immaculate Kaolin Company . . . . . Langley, S. C.
Imperial Kaolin Company . . . . . Seivern, S. C.
Killian Fire Brick Company . . . . . Killian, S. C.
T. G. Lamar Company . . . . . Langley, S. C.
Landrum Fire Brick Works . . . . . Columbia, S. C.
McMillan (J. B.) . . . . . Graniteville, S. C.
R. McNamee & Co . . . . . Bath, S. C.
Paragon Kaolin Works . . . . . Langley, S. C.
Peerless Clay Company . . . . . Langley, S. C.
Sterling Kaolin Company . . . . . Aiken, S. C.
U. S. Kaolin Company . . . . . Steedman, S. C.
W. St. J. Jervey, Charleston, S. C . . . . . Miles Mill, S. C.

The aggregate output shipped during 1906 was 44,665 short tons, valued at $175,351.00.

Potteries.

Operators.	Office.	Works.
Dougherty & Baynham	Trenton	Trenton.
B. F. Farmer	Easley, R. F. D. 6.	Maynard.
Joseph B. Findley	R. F. D. 1, Pickens	Wolf Creek.
T. L. Hahn	North Augusta	North Augusta.
L. D. Harley & Co	Trenton	Miles Mill.
M. A. Hilton	Sharon	Sharon.
H. M. Johnson	Landford Station	Landford Station.
W. F. Outen & Co	Catawba	Catawba.
Wood Pottery Co	North Augusta	North Augusta.
John Moore, President		

FIRE BRICK AND OTHER REFRACTORY ARTICLES.

Operators.

Killian Fire Brick Company . . . . . Killian, S. C.
Landrum Fire Brick Works . . . . . Columbia, S. C.

DIRECTORY OF BRICK AND TILE MANUFACTURERS IN SOUTH CAROLINA.

Operators.	Office.	Works.
Vincent Ackerman	Cottageville	Cottageville.
Arthur Allen	Pelzer	Williamston.
W. N. Ashe, Proprietor	Rock Hill	
(1) Greers Brick Works		Greers.
(2) Rock Hill Brick Works		Rock Hill.
(3) Catawba Brick Co		Van Wyck.
S. C. Berry	Greer	Greer.
J. W. Brasington	Cheraw	Cheraw.
Brick and Lumber Yards	Bowman	Bowman.
Philipp Gerloch, Mgr		
R. A. Brown & Sons	Concord, N. C.	Rock Hill, also in N.C.
Joseph N. Bynum	Anderson	Richland.
Cain & Hill	Sharon	Sharon.
Camden Press Brick Co	Camden	Camden.
Charlotte Brick Co	Charlotte, N. C.	Grattan.
C. B. Chase, Supt		
Chester Brick Co	Chester	Chester.
D. P. Crosby		
Chesterfield Brick Co	Society Hill	Chesterfield.
Craig & Co	Chesterfield	Chesterfield.
W. D. Craig		
T. T. & M. E. Cromer	Greenwood	Greenwood.
Cross Anchor Oil Co	Cross Anchor	Cross Anchor.
Cunningham & Means	Greenville	Greenville.
Darlington Brick Co	Darlington	Society Hill.
Bright, Williamson, Proprietors		
D. J. S. Derrick & Co	R. F. D. 2, Leesville	Leesville.

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Operators.	Office.	Works.
Dougherty & Baynham	Trenton	(Trenton Pottery.)
Glass and Pottery Works		
Alvin Etheredge	Saluda	Saluda.
John A. Floyd	Scranton	Scranton.
John W. Fowler	Laurens	Laurens.
Fowler & Black	Jonesville	Jonesville.
W. B. Fowler		
W. R. Funk	Kingstree	Kingstree.
Gaffney Brick Co.	Gaffney	Gaffney.
J. H. Curry, President		
Greenwood Brick Co.	Greenwood	Greenwood.
J. R. Nicholls, Mgr.		
Gross Bros.	Lexington	Lexington.
G. A. Guignard	Columbia	Columbia.
Hankinson Brick Co.	Augusta	North Augusta.
Hankinson & Son		
G. H. Hanna	Spartanburg	Cedar Spring.
W. L. Harley	Orangeburg	Orangeburg.
John S. Horlbeck	Charleston	Christ Church Par.
W. G. Hyatt & Sons	Latta	Latta.
Hyatt Brick Co., Inc.	Columbia	Columbia.
James H. Rodger, President	1519 Main St.	Columbia.
W. Thomas Jackson	Yorkville	Yorkville.
Jackson Press Brick Co.	Augusta, Ga. Box 604	North Augusta.
Archibald Jamison	Greenville	Greenville.
J. C. Jeffcoat	Norway	Norway.
Kay & Anderson	Westminster	Westminster.
Killian Fire Brick Co.	Charleston	Killian.
T. M. Waring, President		
J. H. Koon	Little Mountain	Little Mountain.
Landrum Fire Brick Works	Columbia	Columbia.
R. M. Stork, Prop.		
D. A. Layton	Marion	Florence, Layton Station, Pee Dee.
Lesley Brick Co.	Abbeville	Abbeville.
J. W. Lesley, Prop.		
H. P. Little	Conway	Conway.
Lydia Cotton Mills	Clinton	Clinton.
C. M. Bailey, Prop.		
D. H. McGregor	Ruby	Ruby.
W. M. McKenzie	RFD6, Bishopville.	Bishopville.
J. D. McMahan	Richland	Richland.
James L. McMillan	Abbeville	Abbeville.
McNally Brick Works	Union	Union.
R. L. McNally		
Mallory Brick Co.	Mallory	Latta.
James L. Maxwell	Spartanburg	Spartanburg.
W. H. Mays	Greenwood	Greenwood.
J. N. Moore & Sons	Ashland, R. D. from Bishopville	Ashland.
J. W. & R. S. Moore, Props.	Dillon (or Marlboro)	
Dillon Brick Co.		Dillon.
Bennettsville Brick Co.		Mandeville.
Henry Moseley	Greenville	Greenville.
J. C. Nally	Anderson	Anderson.
Newberry Brick & Block Cement Co.	Newberry	Newberry.
W. F. Gray, President		
J. B. Oxner, Prop.	Gilbert	Lorena.
Brick Works		
Pickens Brick Co.	Pickens	Pickens.
Bivens & Holder, Props.		
J. L. Pinson	Greenwood	Greenwood.
Pool & Matthews	Newberry	Newberry.
Ramsey & Trammel	Anderson	Anderson.
Robert P. Ransom	Williamston	Williamston.
J. D. Rihion	Chesterfield	
Pierre Robert	Garnett	Garnett.

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Operators.	Office.	Works.
Chas. P. Robinson	Chapin	Chapin.
J. H. Roe & Co.	Tigerville	Tigerville.
Rutherford & Co.	Augusta, Ga., 627 Broadway	Hamburg.
Savannah Building Supply Co.	Savannah, Ga.	Hardeeville.
Chas. L. Rounds		
L. B. Smith	Mullins	Mullins.
T. E. Smith	Donalds	Donalds.
W. C. Smith & Bro.	Dunbar	Dunbar.
Smith & Perritt Mfg. Co.	Mullins	Mullins.
Summerville Brick Co.	Summerville	Summerville.
John W. Taylor, President		
Sumter Brick Works	Sumter	Sumter.
Irving A. Ryttenberg, Prop.		
J. C. Upchurch	Marburg, Chesterfield County	
W. M. Warren	Branchville	Branchville.
J. C. Wolling	Leeds	Leeds.

Total value of Clay products (manufactured), $830,481.00.

SAND.

Glass Sand Directory.

Killian Fire Brick Company	Killian, S. C.
Blackville Sand Company	Blackville, S. C.
John F. Weekly	Ulmers, S. C.
J. M. Tindal	Tindal, S. C.

The Carolina Glass Company at Columbia, S. C., is the only consumer of glass sand in South Carolina.

Sand for general structural work and for the manufacture of cement blocks and sand brick has numerous neighborhood sources of supply. The sand in the bed of the Pon Pon portion of the Edisto River constitutes the greatest source of supply utilized in this State.

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Chapter VI.

Water Powers of South Carolina

The State of South Carolina is divided geologically into six sections, viz.: Sea Coast, Lower Pine Belt, Upper Pine Belt, Red Hill Country, Sand Hills, Piedmont Section and Mountains. The first three sections are flat land which attain an elevation of about 130 feet above sea level at the foot of the Red and Sand Hills and Piedmont region. The Red Hills have elevations up to 550 feet; the Sand Hills elevations of 700 feet; the Piedmont of 1,200; the Mountains of over 3,000 feet.

The large water powers are in the Piedmont section, which extends north of Columbia and to the foot of the mountains, while numerous smaller powers are to be found in the streams of the Sand Hills and Mountains.

RIVERS.

There are three great river systems that drain the State—the Pedee, Santee and Savannah.

PEDEE RIVER.

The Pedee River has its source in the northwest corner of North Carolina, with one feeder extending up into Virginia. After traversing 150 miles of North Carolina and draining 9,700 square miles of its territory, it enters this State and flows on to the ocean at Georgetown. The river is navigable from the ocean up to Cheraw, where the first river falls come at the foot of the Sand Hills. Although this is the largest river that flows in the State, it has no valuable water powers of note in this State, as it reaches its low level shortly after crossing the boundary line.

SANTEE RIVER.

The Santee River system comprises the Congaree and Wateree Rivers, with their tributaries, and furnishes the larger part of the water powers of the State.

The Congaree River is formed by the junction of the Broad and Saluda Rivers at Columbia. It has no water powers except at the point of formation, where the Columbia Canal utilizes a portion of its waters and fall.

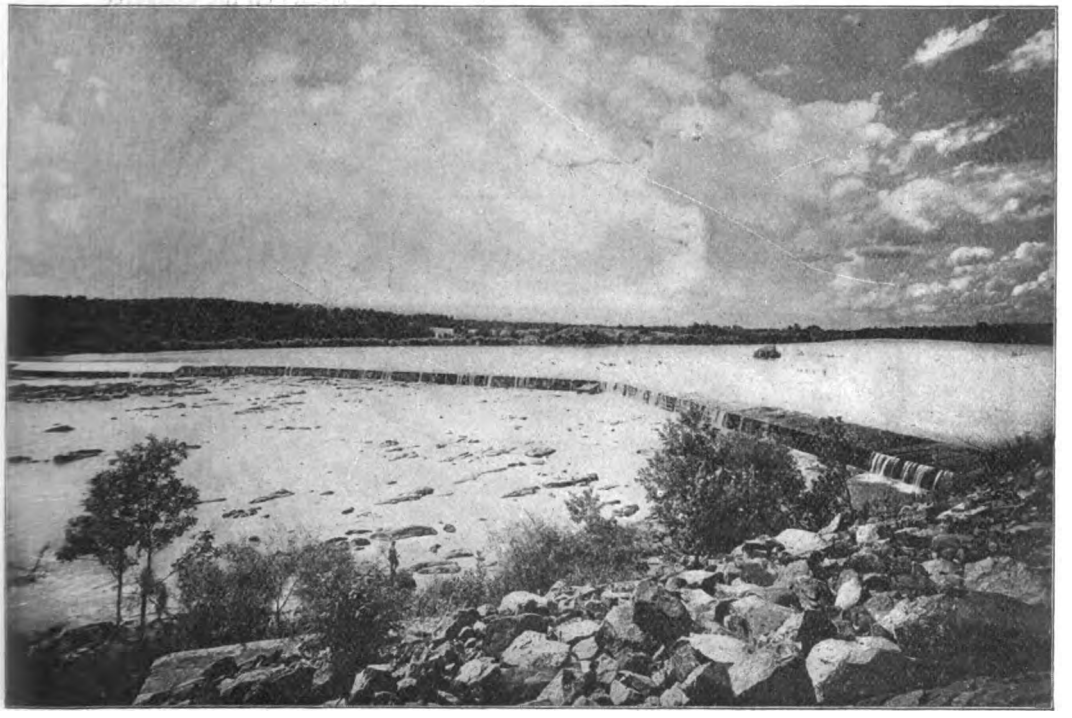
The Broad River rises in the mountains of North Carolina, and carrying the drainage from 1,400 square miles, it enters this State at an elevation of about 750 feet above sea level, and flows down to the Congaree at an elevation of 120 feet above sea level, giving a total fall of 630 feet and having a total drainage area of 4,950 square miles. The Saluda River rises in North Carolina and drains 300 square miles of that State. Some of its waters spring at an elevation of over 2,000 feet, and at its formation, by the juncture of the South Forks and

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Middle Saluda, it has an elevation of 900 feet, giving a total fall from this point to its juncture with the Broad of 766 feet; it has a total drainage of 2,350.

The Wateree River (known above as the Catawba) is navigable up to the shoals above Camden. This river rises in the middle portion of North Carolina, and carrying the drainage from 3,085 square miles of that State, it enters this State at an elevation of about 515 feet, giving a total fall within the State of 395 feet down to Camden, where it has a drainage area of 4,376 square miles

The Savannah River for its full length is the boundary between this State and Georgia, and its tributaries, the Tugaloo and Chatuga Rivers, are the State line up to the extreme northwestern corner of this State. The head waters of the Tugaloo and Seneca Rivers have their source over 1,000 feet above sea level, and these rivers form the Savannah at an elevation of 567 feet and bring to it the drainage from 1,970 square miles of country. The Savannah flows down to Augusta through 337 feet of fall, and at that point it has a drainage area of 6,830 square miles. This river and its tributaries have many valuable water powers.



DAM ACROSS BROAD RIVER FOR COLUMBIA CANAL.

RAINFALL.

The rainfall in the basins of these rivers is approximately 51 inches, but in the mountainous section, which includes the greater part of North Carolina drainage area of the Santee and Savannah systems, the rainfall is much greater, and this mountainous section is of great value in maintaining the even flow of the rivers, both on account of its large rainfall and of its large wooded area. The Sand Hills are also excellent feeders, as their porous soils absorb a large proportion of the rainfall, giving a greater flow per square mile of drainage area than any other section.

WATER POWERS

By a water power we understand a formation at which the fall in a stream of water can be utilized by means of some engineering work to turn machinery

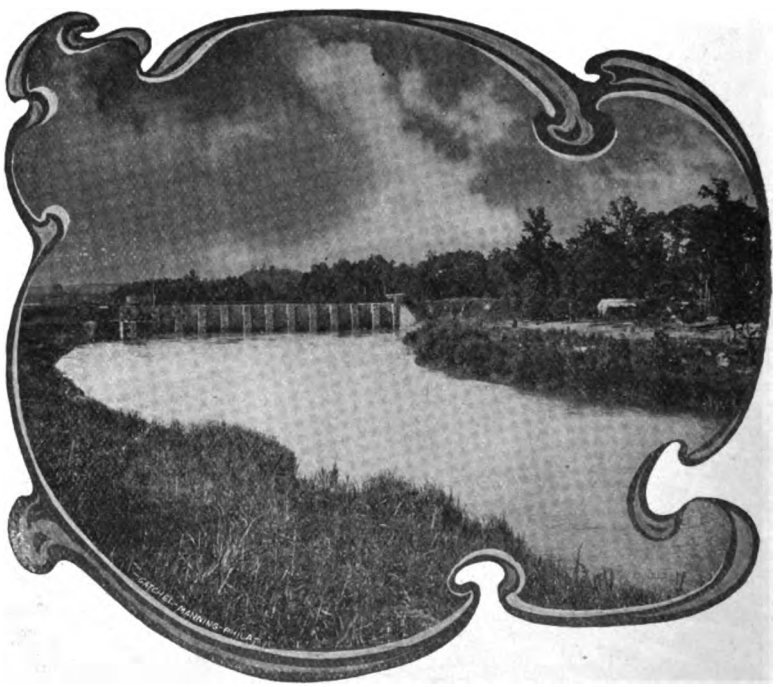
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for the generation of power. Theoretically, power could be developed at any point on a flowing stream, but if this cannot be done in a permanent manner, by engineering works at a practical cost, it would not be called a water power. It requires, theoretically, about 530 cubic feet of water per minute falling through one foot to produce a horse power (33,000 foot pounds), but a good class of water wheel cannot be counted upon to develop over 80 per cent. of this theoreitcal power, so that it requires in practice about 662.5 cubic feet of water for one footfall to produce a horse power. This latter figure has been used in calculating the powers hereinafter given. For long distance electrical transmission not much over 65 per cent. of the theoretical water power is available for driving machinery in a distant plant.

BROAD RIVER.

Taking the Broad River, we find the following known powers which are of interest:

1. The Columbia Canal, which, by means of an 8-foot dam and three miles of canal, brings the waters of the Broad River to power houses on the Congaree



DAM FOR DEVELOPMENT OF WATER POWER.

River, where it is utilized under an average head of 28 feet, generating under ordinary conditions about 10,000 horse power, the greater part of which is utilized by means of electrical transmission in the cotton mills of Columbia and for lighting and street railway purposes. This location is susceptible of a larger power development by building a dam across the Congaree River and thus utilizing the waters of the Saluda River also, the Broad's waters only being used at present.

2. Property of Central Carolina Power Company, which proposes to build dam one mile above mouth of Little River and pond the water up to Alston, a distance of about 10 miles. Fall, 31 feet; horse power, 10,000 primary, 10,000 secondary. This location is 16 miles above Columbia.

3. Parr's Shoals Power Company, just above Alston, where a development with about 32 feet fall and a large pondage is contemplated. Drainage, 4,600 square miles. Location, 28 miles above Columbia.

4. Union Manufacturing and Power Company, two (2) miles above the crossing of the river, by the Seaboard Railroad, where a 24-foot development has

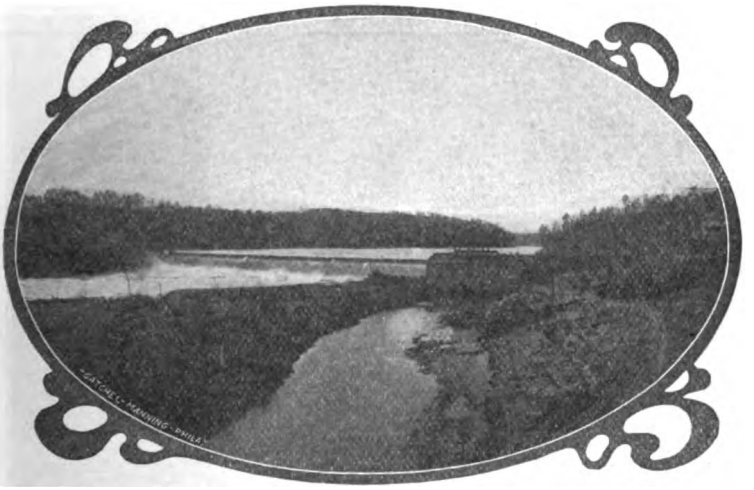
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been made, giving 8,000 horse power, which is used in driving cotton mills in Union 12 miles away.

5. At Lockhart Shoals, about 12 miles above the Union Manufacturing and Power Company's dam, the river has a fall of 50 feet and a drainage area of 2,400 square miles. Part of the power is utilized with a 30-foot fall to develop about 5,000 horse power, which is used in driving the Lockhart Cotton Mills.

6. Ninety-nine Islands, owned by the Southern Power Co., where there is a fall of 51 feet available. The development of this power is now under way. This power will form one of several powers developed by the Southern Power Company, all of which will be electrically connected by a system of transmission lines furnishing power to all of the large towns in the northern central part of this State (Lancaster, Chester, Rock Hill, Yorkville, Gaffney, Spartanburg) and to a number of towns in North Carolina.

7. Cherokee Falls, near the crossing of the river by the Southern Railway main line. Fall, 50 feet. A power company has made arrangements to develop a large power at this point. These powers of the Broad River do not account for 250 feet of its fall within this State, much of which can be developed at other points than those mentioned.



VIEW OF DEVELOPED POWER.

SALUDA RIVER.

On the Saluda River we find the following notable powers:

1. Saluda Factory and mouth of the river. There is about 26 feet fall here, and the drainage area is 2,350 square miles, but this fall could best be utilized in connection with the Columbia Canal, as above mentioned.

2. Dreher's Shoals, about 10 miles above the mouth of the river, where it is proposed to build a 50-foot dam and develop 10,000 horse power. Drainage area, 2,200.

3. From Long's Ferry up the river for 15 miles there are a series of shoals giving a total fall of 89 feet, which could be utilized in one or more developments that would furnish 20,000 horse power.

4. The next power of any importance is at Ware Shoals, where there is a development utilizing 65 feet fall and furnishing 6,000 horse power, which is partly utilized by the Ware Shoals Manufacturing Company's cotton mill.

5. Belton Power Company, which utilizes about 40 feet fall, is developing approximately 4,000 horse power for use in the cotton mills at Belton, Williamston, and Anderson.

6. The Pelzer Manufacturing Company have two developments, the lower with 40 feet fall furnished 5,000 horse power for electrical transmission to their mills and an upper development with 26 feet fall, driving mills 1 and 2, developing 2,500 horse power.

7. Piedmont Manufacturing Company, which utilizes 24 feet fall in its cotton mill.

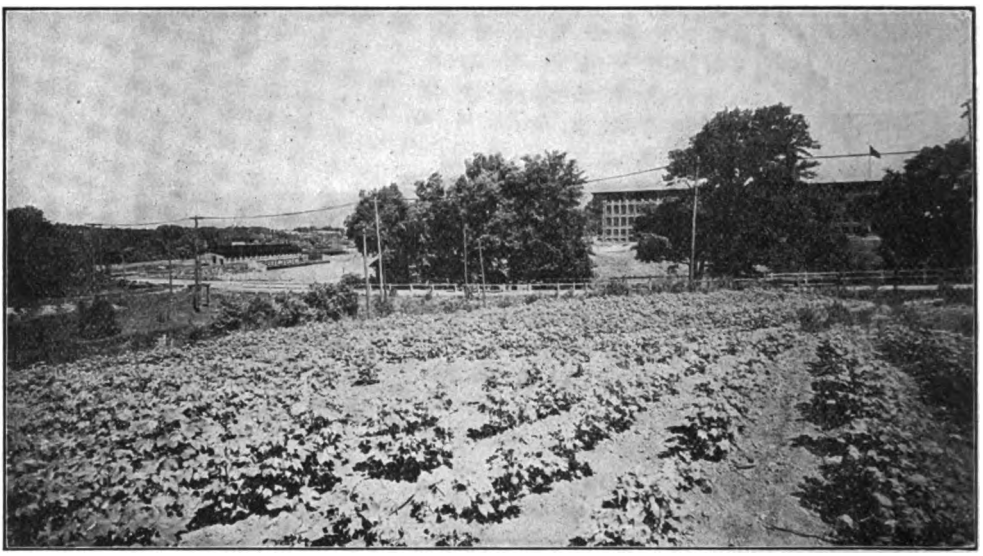
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8. Saluda River Power Company, above Greenville, have made a development which furnishes power to some mills in Greenville. The mentioned powers on the Saluda River do not account for 450 feet of its total fall, much of which could be developed at other points.

THE WATEREE (OR CATAWBA) RIVER.

The Wateree and Catawba Rivers have six valuable powers, all of which are owned by the Southern Power Company of Charlotte, N. C. These powers are as follows:

1. Wateree Canal, just above Camden, where there is a fall of 52 feet. Drainage area, 4,376 square miles.
2. Rocky Creek, Great Falls and Fishing Creek—these three powers have a total fall of 173 feet. The development of Great Falls has just been completed, and the others will be undertaken as soon as the demand for power warrants.
3. Landsford, near Lancaster, is the next power, where there is a fall of 40 feet.
4. Catawba comes next, where the Southern Power Company has had a 10,000 horse power plant in operation for several years, furnishing power to Rock Hill, Fort Mill, Pineville and Charlotte.



COTTON FIELD, COTTON MILL AND DEVELOPED WATER POWER.

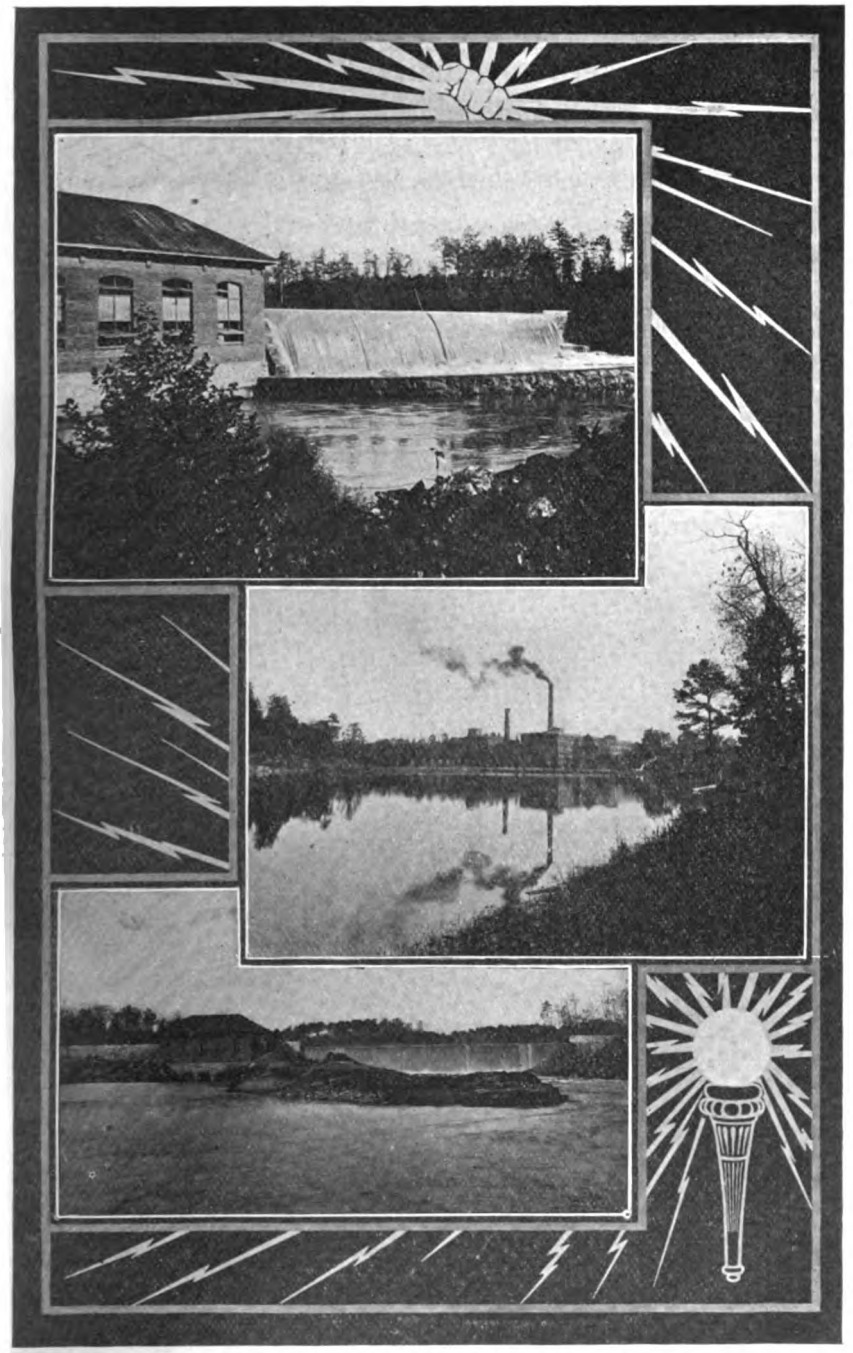
These mentioned powers do not cover 100 feet of the rivers' fall, some of which could probably be developed, especially between the Wateree Canal and Rocky Creek.

SAVANNAH RIVER.

The Savannah River furnishes a considerable number of powers:

1. The Augusta Canal—45 feet fall.
2. Blue Jacket and Little River Shoals.
3. Twin City Power Company, which proposes to develop 33 feet of fall, with a possible development of 50 feet.
4. Calhoun Falls, where there is a fall of 75 feet. This is one of the biggest powers in the State, and a company has been formed looking to its development. It is owned by J. C. Calhoun, of New York City.
5. Cherokee Shoals, the property of the Savannah River Power Company, where it is proposed to develop 6,600 horse power under a head of 26 feet.
6. Gregg Shoals, owned and developed by the Savannah River Power Company. Fall, 13.6 feet; 3,000 horse power. Power is transmitted to Anderson, Abbeville, Greenwood and Calhoun Falls through 65 miles of line at 23,000 volts.

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PELZER MILLS AND POWER PLANTS.

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7. Middleton's Shoals, where there is a fall of 18 feet.
8. McDaniel's Shoals, where there is a fall of 30 feet.
9. Andersonville—fall unknown but said to be a valuable power.

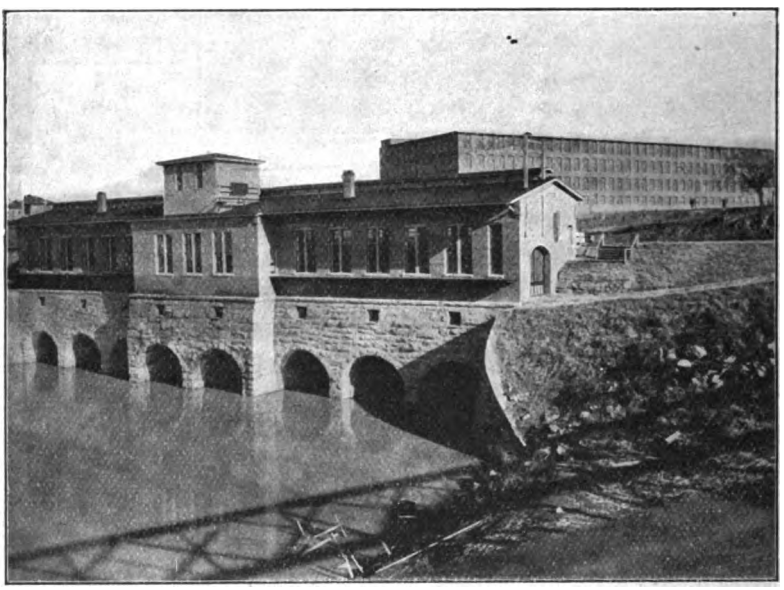
POWERS ON TRIBUTARY RIVERS.

The meagre data available regarding the shoals on the rivers tributary to those above given prevents any definite description of them, except that the United States Government Surveys give some approximate data regarding the streams in the northwestern section of the State, from which the accompanying table is prepared.

ENOREE RIVER.

The Enoree River is the first tributary to the Broad and has a drainage area of 730 square miles and a fall of 573 feet, or about 7 feet to the mile.

1. Musgrove Mill—fall about 10 feet. Drainage area, 400 square miles.
2. Yarboro's Mill—fall 16 feet—400 square miles.
3. Long Shoals.
4. Enoree Mills—fall 70 feet. Utilized for driving a cotton mill.
5. Van Patton Shoal—fall 55 feet. Development commenced.
6. Pelham Mills—fall 18 feet.



POWER PLANT, COLUMBIA, S. C.—10,000 H. P. DEVELOPED FROM COLUMBIA CANAL.

TYGER RIVER.

The Tyger River has a drainage area of 720 square miles and a fall of 6 or 7 feet to the mile. Its powers are small and so far as I know there are four developments on it. Two at Tucapau for the Tucapau Mills, and one at Appalachee, where 2,000 horse power of water wheels have been put in to operate under 47-foot head and at Fairmont for the Tiger Cotton Mills. There must be several good powers on this stream and its head waters capable of furnishing several hundred horse power. At Hill's Factory, between Union and Laurens, there is a fall of 40 feet which should be of value. The drainage area at this point is 308 square miles.

PACOLET RIVER.

The Pacolet River drains 475 miles and has an average fall of 6 or 7 feet per mile. In its upper part the bed of the river is very precipitous, furnishing many good powers. The Pacolet Manufacturing Company utilizes a 60-foot fall in their mills and the Clifton Manufacturing Company 22 feet. The Mary Louise

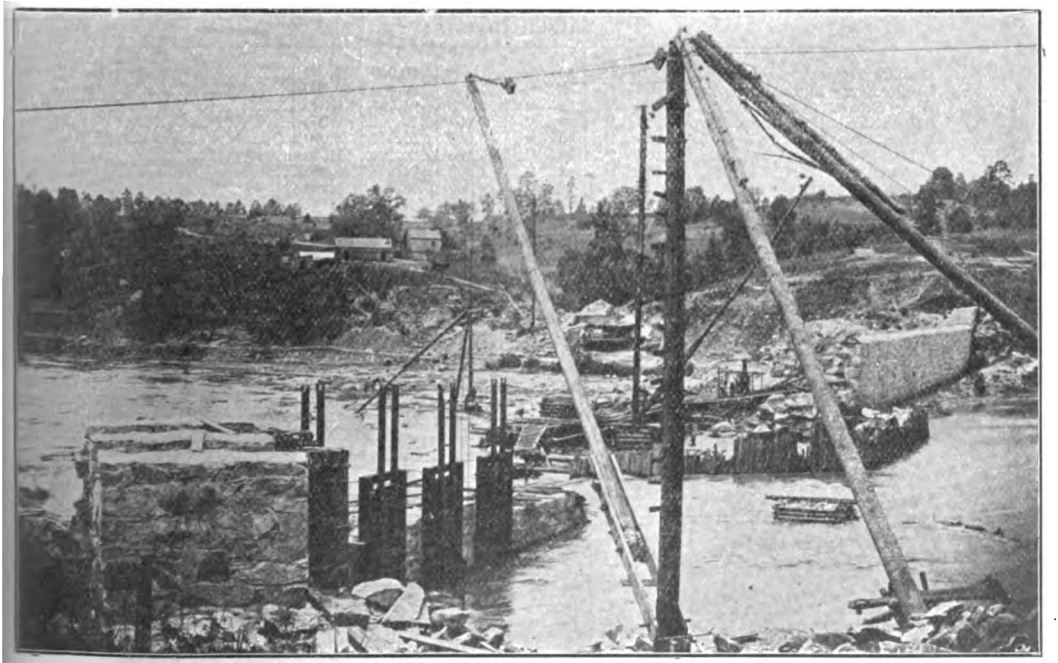
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Mills, near Cowpens, have a developed power on this river, and Mr. J. B. Cleveland owns two powers, one at Big Island, 35 feet fall, and one at Flack Rock, 28 feet fall.

SALUDA RIVER TRIBUTARIES.

The Saluda River has several tributaries with good powers. Twelve Mile Creek in Lexington County has a heavy fall and it drains a sand hill country from which the run-off is regular and large. The Lexington Manufacturing Company uses 26 feet fall, generating 200 horse power, and between their plant and the river there is much available power for small manufacturing plants. Other tributary creeks from these same hills must also furnish many small available powers.

The Reedy River, a tributary of the Saluda, has a drainage area of 386 square miles and has a very heavy fall. There are many small powers on this stream. The first is at Boyd's Mill, where a 50-foot development giving 1,000 horse power is proposed. Above this there are many undeveloped falls or shoals. The largest power on the upper part of the stream is at Greenville, where there is a total fall of over 80 feet, the greater part of which is used in several manufacturing plants.



CONSTRUCTING A POWER DAM.

TRIBUTARIES OF WATEREE AND CATAWBA.

The only notable tributaries of the Wateree and Catawba Rivers are as follows:

Pine Tree Creek, near Camden, on which the Hermitage Cotton Mills have a development. There are several small powers on these streams suitable for local use.

Fishing Creek, in Chester County, on which there have been several small developments of from 50 to 100 horse power.

TRIBUTARY OF CONGAREE RIVER.

Congaree Creek, a tributary of the Congaree River, is a Sand Hill stream with a good fall and even flow, on which several small powers could be developed. The Saxe Gotha Mills on one of its tributaries utilizes 50 horse power.

TRIBUTARIES OF SAVANNAH RIVER.

The tributaries of the Savannah furnish a large number of powers about which little of detail is known, but the accompanying table will give the total power in these streams, figuring one-half of the total fall for the full drainage area.

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WATER POWERS IN SOUTH CAROLINA.

Location.	Area. Drainage	Fall.	H. P. Devel.	H. P. Undevel.	Total Power.	Remarks
Congaree River.						
Columbia	7,300 S. M.	31 feet.	10,000	5,000	15,000	
Broad River.						
Cen. Car. Power Co.	4,760 "	31 "	.....	10,000	10,000	
Parr Shoals	4,600 "	32 "	.....	10,000	10,000	
Union Mfg. and Power Co.	2,600 "	24 "	8,000	.....	8,000	
Lockhart Shoals	2,400 "	50 "	5,000	5,000	10,000	
Ninety-Nine Islands	1,357 "	51 "	.....	10,000	10,000	Now being developed by Southern Power Co.
Cherokee Falls	1,357 "	50 "	.....	10,000	10,000	Now being developed by Hugh MacRae & Co
Saluda River.						
Drehers Shoals	2,200 "	50 "	.....	10,000	10,000	
Longs Ferry and Above	2,000 "	89 "	.....	20,000	20,000	
Ware Shoals	635 "	65 "	2,000	4,000	6,000	
Belton	523 "	30 "	3,000	.....	3,000	
Pelzer, No. 1	400 "	45 "	3,000	.....	3,000	
Pelzer, No. 2	400 "	22 "	1,500	.....	1,500	
Piedmont	380 "	24 "	1,500	.....	1,500	
Saluda River Power Co.	.....	28 "	4,200	.....	4,200	
Wateree River.						
Wateree Canal	4,375 "	52 "	.....	20,000	20,000	Owned by Southern Power Co.
Rocky Creek	.....	.....	.....	20,000	.....	75 ft. fall bet. canal and Rocky Creek; data on power not available. Owned by Southern Power Co.
Great Falls	8,600 "	173 "	32,000	.....	67,000	
Fishing Creek	.....	.....	.....	15,000	.....	
Landsford	3,425 "	.....	.....	12,000	12,000	Owned by Southern Power Co.
Catawba	.....	.....	10,000	.....	10,000	Owned by Southern Power Co.
Savannah River.						
Twin City Power Co.	5,135 "	50 "	.....	20,000	20,000	
Calhoun Falls	2,664 "	75 "	.....	27,000	27,000	Owned by Hugh MacRae & Co.
Cherokee Shoals	2,212 "	26 "	.....	6,600	6,600	
Gregg Shoals	2,100 "	14 "	3,300	.....	3,300	
Middleton's Shoals	2,078 "	18 "	.....	4,500	4,500	Owned by Anderson Guaranty & T. Co.
McDaniel's Shoals	1,900 "	30 "	.....	6,500	6,500	Owned by Anderson Guaranty & T. Co.
Andersonville	.....	.....	.....	.....	.....	
Enoree River (Tributary of Broad River).						
Musgrove Mill	400 "	10 "	.....	.....	.....	
Yarboro's Mill	375 "	16 "	.....	.....	.....	
Long Shoals	.....	.....	.....	.....	.....	
Enoree Mills	.....	70 "	.....	.....	.....	
Van Patton Shoals	.....	55 "	.....	.....	.....	
Pelham Mills	.....	.....	.....	.....	.....	
Tyger River (Tributary of Broad River).						
Hill's Factory	.....	.....	.....	.....	.....	
Tyger River	.....	47 "	2,000	.....	2,000	
Tucapau	.....	.....	.....	.....	.....	
Appalachee	.....	.....	.....	.....	.....	

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WATER POWERS IN SOUTH CAROLINA.

Location.	Drainage Area.	Fall.	H. P. Devel.	H. P. Undevel	Total Power.	Remarks.
Pacolet (Tributary of Broad River).						
Pacolet Mfg. Co..	380 S. M.	54 feet.	3,000	.....	3,000	Two developments.
Clifton..	220 "	65½ "	3,600	.....	.....	Three developments.
Mary Louise..	.....	.....	.....	.....	.....	Used by Mary Louise Cotton Mill.
Lawson's Fork (Tributary of Broad River).						
Below Glendale..	82 "	15 "	.....	.....	.....	.....
Glendale..	.....	35 "	.....	.....	.....	.....
Whitney Mfg. Co..	.....	24 "	215	215	.....	.....
Reedy River (Tributary of Saluda River).						
Boyd's Mill..	.....	50 "	.....	1,000	1,000	.....
Batesville Mill..	.....	20 "	.....	.....	.....	.....
Pelham Mills..	.....	.....	.....	.....	.....	.....
Camperdown..	44 "	64 "	.....	.....	.....	.....
Reedy River Mfg. Co.. ..	87 "	22 "	.....	.....	.....	.....
Twelve-Mile Creek (Tributary of Saluda River).						
Below Lexington..	93 "	100 "	.....	.....	.....	.....
Lexington Mfg. Co..	.....	26 "	200	.....	200	.....
Congaree Creek (Tributary of Congaree River).						
Taylor Property..	.....	16 "	.....	700	.....	.....
Red Bank Creek (Tributary of Congaree River).						
Saxe Gotha Mills..	12 "	50 "	.....	.....	50	.....
Pine Creek (Tributary of Wateree River).						
Hermitage Cotton Mills.. ..	.....	18 "	250	.....	250	.....
Fishing Creek (Tributary of Wateree River).						
Manetta Mills..	.....	31½ "	350	.....	350	.....
Big Horse Creek (Tributary of Savannah River).						
Bath..	.....	17 "	600	.....	600	.....
Langley..	.....	22 "	.....	.....	.....	.....
Graniteville..	.....	43 "	600	.....	600	.....
Vaucluse..	.....	48 "	400	.....	400	.....

See also table of powers on the tributaries of the Savannah River. Horse-power given in table is approximate only, and generally indicates power claimed by owners.

*Big Island..	.....	35 "	.....	1,000	1,000	Owned by J. B. Cleveland.
Flat Rock..	.....	28 "	.....	800	800	Owned by J. B. Cleveland.

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WATER POWERS ON THE TRIBUTARIES OF THE SAVANNAH RIVER.

	Drainage Area, Square Miles.	Fall, Feet.	24-Hour Power; 80 Per Cent. W. W. Horse-Power.
Chattooga River.			
To mouth of West Fork River	101.68	3,500	8,072
To mouth of Stekoa Creek	238.08	400	3,076
To mouth of Tallulah River	460.88	100	1,582
To mouth of Panther Creek	508.28	100	2,138
To mouth of Chauga River	708.28	150	4,093
Tugaloo River.			
To mouth of Choastea Creek	810.08	50	1,700
To junction with Seneca River	915.68	33	1,290
Chauga River.			
To junction with Tugaloo River	66.00	1,050	1,569
Whitewater River.			
To mouth of Big Eastatoe Creek	206.4	3,200	14,954
Keowee River.			
To mouth of Little River	448.8	150	1,524
Seneca River.			
To junction with Tugaloo River	1,054.4	108	3,626
Little River (Abbeville County).			
To mouth of Long Cane Creek	460.56	425	4,431
To junction with Savannah River	494.56	65	1,405
Little River (Oconee County)	135.6	750	2,302
Twelve-Mile Creek	170.4	975	3,792
Conneross Creek	102.4	725	1,681
Eighteen-Mile Creek	69.2	540	881
Twenty-three-Mile Creek	82.4	450	839
Twenty-six-Mile Creek	72.4	450	738
Big Generostee Creek	91.2	300	619
Little Generostee Creek	36.4	300	247
Rocky River	280.00	540	3,423
Long Cane Creek	206.4	375	1,752

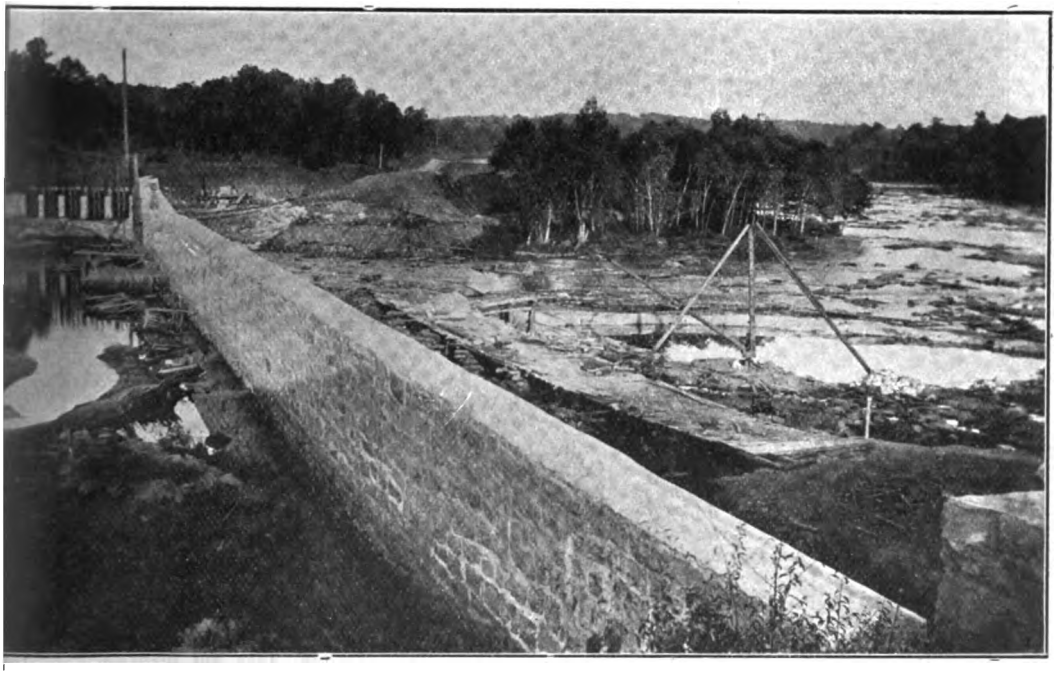
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MISCELLANEOUS POWERS.

Owing to the lack of definite information from surveys of the streams of this State, no accurate list can be prepared of its powers. Only a careful survey of each stream, looking to its capabilities for power developments, can bring to light the possibilities that they afford. There is no part of the State above Augusta on the Savannah, Columbia on the Congaree, Camden on the Wateree, or Cheraw on the Pedee, that is not within easy reach of water power electrically transmitted. There are hundreds of undeveloped small powers available for use, where small manufacturing plants demand them, that could be made economical producers of power.

COST OF DEVELOPMENT.

The abundance of rock and sand for building purposes and the good foundations available for hydraulic constructions make a low cost of developing powers, which has been from $60 to $150 per horse power, including electrical transmission. The local conditions, size of development and the length of the



DAM CONSTRUCTION.

transmission lines affect the cost to a large extent. The shoals are for the most part formed by granite or gneiss ledges, which furnish a good building stone.

POWER COMPANIES.

The first water power in this State, developed for the purpose of selling power, was the Columbia Canal. The company which owns this are selling power for electrical transmission to the manufacturing plants of the city for lighting and street railway purposes. The first time water power electrically transmitted was used for driving a cotton mill in this country was from this plant. The owning company have more demand for power than they can fill.

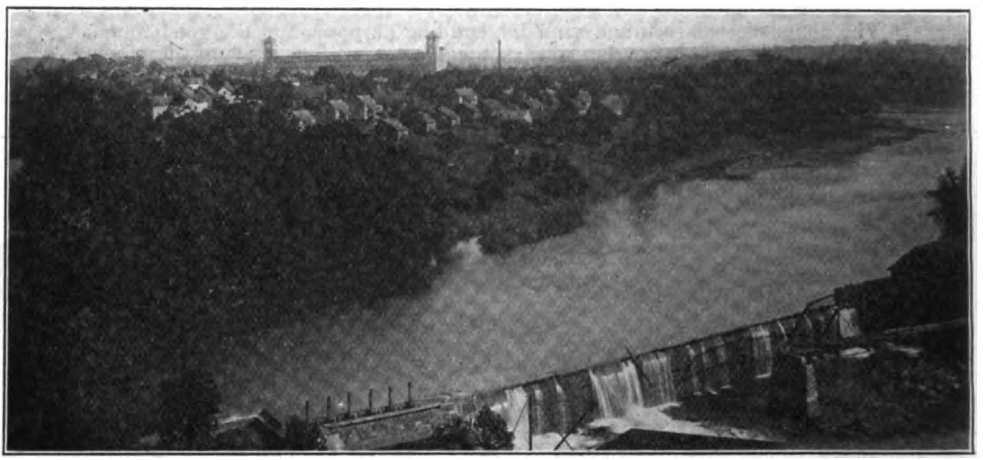
The next power developed for sale was by the Anderson Light and Power Company at Portman Shoals on the Seneca River. This power is used at Anderson for lights, by cotton mills and other purposes. There is a greater demand for the power than can be met.

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The Southern Power Company, with headquarters in Charlotte, own six powers on the Wateree or Catawba River and one on the Broad River. They developed one on the Catawba above Rock Hill a few years back, from which they sell 10,000 horse power as before mentioned; the demand for power not having been met, they have just finished a larger development of 32,000 horse power at Fishing Creek on the Catawba and have another under way at Ninety-nine Islands on the Broad.

The Union Manufacturing and Power Company have developed 6,500 horse power at Neals Shoals on the Broad River, all of which is sold to the cotton mills at Union.

The Saluda River Power Company have developed about 3,000 horse power at a point on the Saluda above Greenville that is transmitted and sold in Greenville.



MILL NEAR THE POWER.

Messrs. Hugh McRae & Company, of Wilmington, have recently purchased Hattons Ford on the Tugaloo, where they will utilize about 60 feet fall to generate 5,000 horse power for sale in Anderson, 17 miles distant.

The Savannah River Power Company have about completed a development at Greggs Shoals on the Savannah, from which they will furnish power to Anderson, Abbeville and Greenwood.

The Twin City Power Company propose to immediately develop quite a large power on the Savannah about 20 miles above Augusta.

MANUFACTURING PLANTS OWNING THEIR OWN POWERS.

The following partial list of plants that have developed powers for their own use, or are buying power from some water power company, does not include any of the numerous powers used by grist and saw mills nor cotton gins.

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COTTON MILLS IN SOUTH CAROLINA OPERATED WHOLLY OR IN PART BY WATER POWER.

S.—Southern Power Company.
A.—Anderson Light and Power Company.
B.—Belton Light and Power Company.
C.—Columbia Canal.
U.—Union Manufacturing and Power Company.
S. R.—Savannah River Power Company.
SL.—Saluda River Power Company.

Name of Mill.	Location.	Stream on Which Power is Located.	Head of Water.	Character and Height of Dam.	Number, Style, and Size of W. W.	Including in Some Instances Steam Power.		
						Spindles Driven.	Looms Driven.	Average No. Yarn Made.
Aragon Cotton Mills.....	Rock Hill, S. C.....	Catawba River (S.).....	.....	.....	.....	10,000	300	.....
Arcadia Mills..	Spartanburg, S .C..	.....	.....	.....	.....	.....	.....	.....
Apalachee Cotton Mills....	Arlington, S. C.....	South Tyger River.....	47 feet	Concrete. 42 feet	.....	18,500	481	.....
Aiken Manufacturing Co...	Bath, S. C.....	Horse Creek.....	17 feet	.....	3—	27,500	802	.....
Anderson Cotton Mills.....	Anderson, S. C.....	Seneca River (A.).....	.....	.....	.....	70,000	1,864	.....
Arcade Cotton Mills.....	Rock Hill, S. C.....	Catawba River (S.).....	.....	.....	.....	12,100	314	.....
Bellevue Cotton Mills....	Rock Hill, S. C.....	Catawba River (S.).....	.....	.....	.....	8,000	200	.....
Brandon Mills.....	Greenville, S. C.....	Saluda River (SL.).....	.....	.....	.....	40,320	992	.....
Belton Mills.....	Belton, S. C.....	Saluda River (B.).....	.....	.....	.....	53,000	1,240	.....
Buffalo Mills.....	Union, S. C.....	Broad River (U.).....	.....	.....	.....	65,000	2,000	.....
Calhoun Mills.....	Calhoun Falls, S. C.....	Savannah River (S. R.)..	.....	.....	.....	15,000	440	.....
Capital City..	Columbia, S. C..	Congaree River (C.).. ..	.....	.....	.....	.....	.....	.....
Hermitage Cotton Mills...	Camden, S. C.....	Pine Creek.....	18 feet	.....	2-36" Victor.	12,000	300	.....
Carolina Mills....	Greenville, S. C..	Reedy River..	.....	.....	.....	.....	.....	.....
Camperdown Cotton Mills.	Greenville, S. C.....	Reedy River.....	.....	.....	1-30" 1-20" Victor.	10,000	432	.....
Cherokee Falls Mfg. Co....	Cherokee Falls, S. C.. ..	Broad River..	.....	.....	.....	.....	.....	.....
Monetta Cotton Mills.. ..	Chester, S. C..	Catawba River (S.).... ..	.....	.....	.....	.....	.....	.....
Clifton Manufacturing Co..	Clifton, S. C.....	Pacolet River.....	65½ feet	.....	11—	86,800	2,660	.....
Clover Cotton Mfg. Co....	Clover, S. C.....	Catawba River (S.).....	.....	.....	.....	15,000	.....	40-60
Conneross Yarn Mill.. ..	Anderson, S. C..	Seneca River (A.)	.....	.....	.....	.....	.....	.....
Converse D. E. Co.....	Glendale, S. C.....	Lawsons Fork.....	.....	.....	39" Victor. 4-42"	37,392	1,068	.....
Columbia Mills Co.....	Columbia, S. C.....	Congaree River (C.).. ..	.....	.....	Victor.	32,000	.....	.....
Courtenay Mfg. Co.....:...	Newry, S. C.....	Little River.....	26 feet	Stone.	2-42" 1-21" Victor.	23,136	648	.....
Cherokee Falls Mfg. Co...	Cherokee Falls, S. C.....	Broad River.....	12 feet	Rock. 11 feet	1-Samson. 4-Hunt.	25,960	608	.....

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COTTON MILLS IN SOUTH CAROLINA OPERATED WHOLLY OR IN PART BY WATER POWER.—(Continued.)

Name of Mill.	Location.	Stream on Which Power is Located.	Head of Water.	Character and Height of Dam.	Number, Style, and Size of W. W.	Including instances in Steam Some Instances Power.		
						Spindles Driven.	Looms Driven.	Average No. Yarn Made.
Enoree Mfg. Co	Enoree, S. C.	Enoree River			2-35" Victor.	36,000	960	
Fingerville Mfg. Co	Fingerville, S. C.	South Pacolet River				9,000		14 & 30-40
Fort Mill Mfg. Co	Fort Mill, S. C.	Catawba River (S.)				10,000	423	
Fork Shoals Cotton Mill	Fountain Inn, S. C.	Saluda River	35 feet		2-21" McCormick.	4,352		8-16
Granby Mills	Columbia, S. C.	Congaree River (C.)						
Graniteville Mfg. Co	Graniteville, S. C.	Horse Creek			3—	54,186	1,698	
Highland Park Mfg. Co	Rock Hill, S. C.	Catawba River (S.)				8,100	836	
H. C. Townsend C. Mill	Anderson, S. C.	Seneca (A.)						
Langley Mfg. Co	Langley, S. C.	Horse Creek	22 feet	Dirt.	2-54" Hercules.	43,000	1,300	
Lancaster Cotton Mills	Lancaster, S. C.	Catawba River (S.)				74,184	1,578	
Lexington Mfg. Co	Lexington, S. C.	Twelve-Mile Creek	26 feet		2-18" McCormick.	7,104	204	
Lockhart Mills	Lockhart, S. C.	Broad River			2-36" 1-22½" Victor.	51,000	1,604	
Mary Louise Mills	Cowpens, S. C.	Pacolet River			1—	4,164		14
Manchester Cotton Mills	Rock Hill, S. C.	Catawba River (S.)				18,192	300	
Manetta Mills	Lando, S. C.	Fishing Creek	33 feet	Concrete. 1 wood, 10 ft.	2-24"	19,000	250	
Millfort Mill Mfg. Co	Fort Mill, S. C.	Catawba River (S.)				10,000	490	
Norris Cotton Mills	Cateeche, S. C.	Twelve-Mile Creek	35 feet	Stone. 22 feet Dirt.	2-33" Victor.	18,288	452	
Octoraro Mills Co	Red Bluff, S. C.	Little Pee Dee	8 feet	7 feet		3,584		12-26
Orr Cotton Mills	Anderson, S. C.	Seneca River (A.)				56,536	1,504	
Pacolet Mfg. Co	Pacolet, S. C.	Pacolet River	54 feet		2-40" 2-42" 2-48" Vic. 1-25" 1-21"	28,480	1,041	
Palmetto Cotton Mills	Columbia, S. C.	Congaree River (C.)						
Pendleton Mfg. Co	Autun, S. C.	Twenty-three-Mile Creek	17 feet		1-25" 1-27½" 1-12" Victor.	2,500	36	
Pelham Mills	Pelham, S. C.	Reedy River	18 feet		2-30" Victor.	11,752		6-16
Pelzer Mfg. Co	Pelzer, S. C.	Saluda River			1-55" 5-39" Victor.	130,000	3,400	

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COTTON MILLS IN SOUTH CAROLINA OPERATED WHOLLY OR IN PART BY WATER POWER.—(Continued.)

Name of Mill.	Location.	Stream on Which Power is Located.	Head of Water.	Character and Height of Dam.	Number, Style, and Size of W. W.	Including instances in Some Instances Steam Power.		
						Spindles Driven.	Looms Driven.	Average No. Yarn Made.
Batesville Mill	Greenville, S. C.	Reedy River				2,600		14
Piedmont Mfg. Co	Piedmont, S. C.	Saluda River	24 feet	Stone.	3— 3-48" Herc. Vict.	67,300	2,066	
Reedy River Mfg. Co	Reedy River, S. C.	Reedy River	28 feet	Rock.	33"	12,000	371	
Richland Cotton Mills	Columbia, S. C.	Congaree River (C.)						
Riverside Mfg. Co	Anderson, S. C.	Seneca River (A.)						
Saxe Gotha Mills	Irene, S. C.	Red Bank Creek	12 feet	Dirt. 8 feet	2-27" Risdon-Alcott.	5,000	240	
Tavora Cotton Mills	Yorkville, S. C.	Catawba River (S.)				5,000		26-30
Toxaway Mills	Anderson, S. C.	Seneca River (A.)						
Tucapau Mills	Tucapau Mills, S. C.	South and Middle Tyger				63,644	1,760	
Tyger Cotton Mills	Fairmont, S. C.	Tyger River	23 feet			8,132	256	
Union Cotton Mills	Union, S. C.	Broad River (U.)				95,600	2,400	
Valley Falls Mfg. Co	Lola, S. C.	Lawson Fork				6,240	156	
Victoria Cotton Mills	Rock Hill, S. C.	Catawba River (S.)				11,656	300	
Vardry Cotton Mills	Greenville, S. C.							
Ware Shoals Mfg. Co	Ware Shoals, S. C.	Saluda River	65 feet	Rock. 27 feet	2-27" Holyoke.	30,000	800	
Williamston Mills	Williamston, S. C.	Saluda River (B.)						
Whitney Mfg. Co	Whitney, S. C.	Lawsons Fork	24 feet		2-30" Victor.	20,572	740	
Woodside Cotton Mills	Greenville, S. C.	Saluda River (B.)						
Victor Mfg. Co	Greers, S. C.	Tyger River				52,540	1,340	

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WATER POWER AVAILABLE.

I estimate that there is approximately 300,000 horse power available on the streams of the State for practical development, of which about 125,000 has been developed, though not all utilized, leaving 175,000 horse power still available.

COST OF POWER.

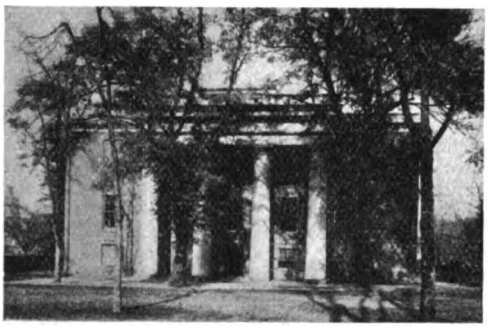
The water power companies operating in the State will sell power to manufacturing enterprises at from $17.50 to $25 per electrical horse power, the price depending upon the quantity purchased and on the distance the current is transmitted. Power can be obtained from these companies in almost any part of middle and upper South Carolina.

The cost of power generated for 3,000 hours per year by steam in this State is about as given below. The figures being for plants in good condition using coal at $4.00 per ton, evaporating in the boilers eight pounds of steam per pound of coal:

With high speed, simple engines	$23.80
With Corliss simple, non-condensing	19.31
With Corliss simple, condensing	15.59
With Corliss compound condensing	11.11

The above figures are for fuel only, and to them must be added the cost of maintenance of plant, attendance and supplies, from $6 to $10 per horse power.

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THE LIBRARY—UNIVERSITY OF SOUTH CAROLINA.

Chapter VII.

Education

South Carolina may justly be proud of her educational record. This chapter will endeavor to show that in the past the State has fostered education and provided well for the uplifting and culture of her sons and daughters; that today the State furnishes varied instruction, spending for this purpose as much per capita as any of her sister States; that the future presents splendid opportunities for the continuation of this noble work.

A sketch of the educational growth in South Carolina for a handbook must necessarily be brief. The reader may, therefore, find unwritten some things that he deems essential. While a complete record of each important step taken by the early settlers in the founding of schools and charitable institutions would be of great interest, these are so numerous that a mere tabulation of their names and places would require pages. It suffices to say that their existence has served a grand and a noble purpose as the forerunners of the great institutions that today are an honor and blessing to the State. They have been more than this, for they have furnished the State with a proud citizenship ready to go forward and do better things for the commonwealth.

In the sketch to follow, the endeavor shall be to say enough of the work done by those pioneers to cause the men of the present day to fondly cherish their memory, emulate their virtues, and follow their example; also to show the result of the work on the present status of education in the State; giving a brief account of the present conditions, showing what the State offers now, and what the future portends.

HISTORICAL SKETCH OF EDUCATION IN SOUTH CAROLINA.

Colonial Period to Revolution.—Our English forefathers realized the fact that "education is the bulwark of civilization." While they regarded education as so important and so necessary to the welfare of the commonwealth, they knew that religion must go hand in hand with education in developing and fostering the best interests of a nation. Therefore, as soon as they placed their feet upon the soil, they gave their most earnest efforts to provide libraries and schools for the education of the children in the arts and sciences and Christian religion.

The first public library was established in Charles Town in 1698, and the Assembly, by special act, placed it under the care of the Church of England.

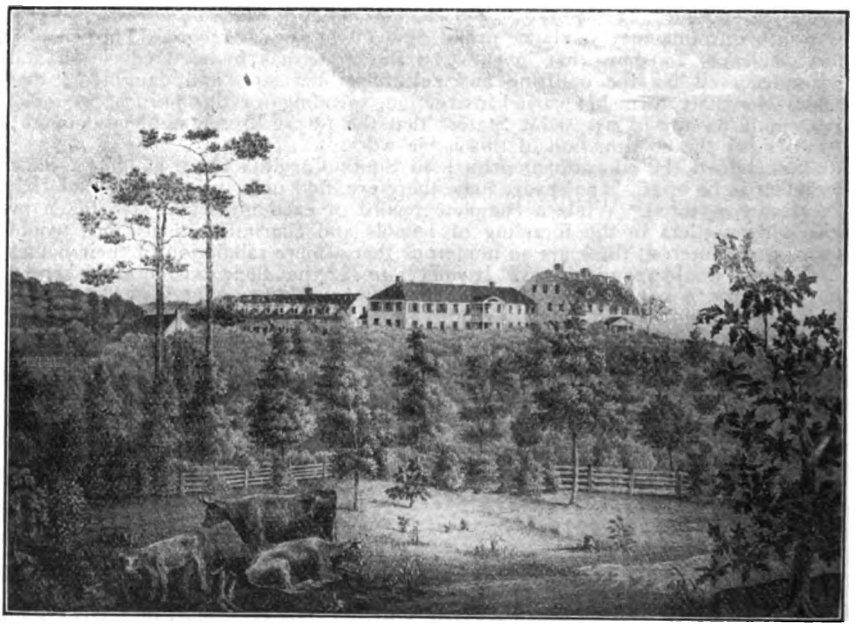
In 1710, an act was passed to found a free school in Charlestown "for the instruction of the youth in this Province in grammar and other arts and sciences and useful learning, and also in the principles of the Christian religion." For some reason this free school never went into operation, and further legislation was necessary. Hence, in 1712, an act entitled "An Act for the Encouragement of Learning" was passed. This act supplemented the deficiencies of the former and provision was made for the education of the people on a more extended scale than by the previous act.

This act constituted a body corporate consisting of the Governor and fifteen others, empowered to make rules and to elect a Master, who shall be of the Church of England. Mr. John Douglass was made Master of said school. No apology is made for introducing this ancient school master, who occupied so proud a position in the history of the education of the State. His attainments were necessarily of a high order, inasmuch as the standard fixed by our venerable fathers was a *classical standard.* This act required the Master "to be capable of teaching the Latin and Greek languages, giving instruction in the principles of the Christian religion, writing, arithmetic, merchants' accounts, the

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art of navigation and surveying, and other useful and practical parts of mathematics." His salary, which was "per annum, paid out of the public treasury in quarterly payments," consisted of £100 and a house. Twelve free scholarships were provided for, lasting five years, to any citizen upon payment of £20. The act further provided that any school master in a country parish was allowed £12 towards erecting a school house. This act shows the liberal spirit that animated the people in the face of the most trying circumstances, as they were harassed by foes from without and dissensions at home. When the free school was founded the Province was torn by the claims of two conflicting Governors, Gov. Robert Johnson and Col. James Moore, which was scarcely settled before a severe contest arose against hostile Indians. The system of education adopted at this time by South Carolina far surpassed that of any of the New England Provinces, up to that date, in effectiveness and liberality.

The first Royal Governor, Gen. Francis Nicholson, showed great zeal in the cause of education. Hewitt says the Governor urged the great importance of establishing the free school. He alleged that the want of early instruction was



S. E. VIEW OF THE SOUTH CAROLINA FEMALE COLLEGIATE INSTITUTE, BARHAMVILLE, NEAR COLUMBIA (1817).

(From a Drawing by Chas. Zimmerman.) (Pendleton's Lithography, Boston.)

one of the chief sources of impiety and immorality, and if they neglected the rising generation, a race of white people as ignorant as the savage Indian would inhabit the land. Animated by the example of the Governor, the colonists made strenuous effort to educate the youth.

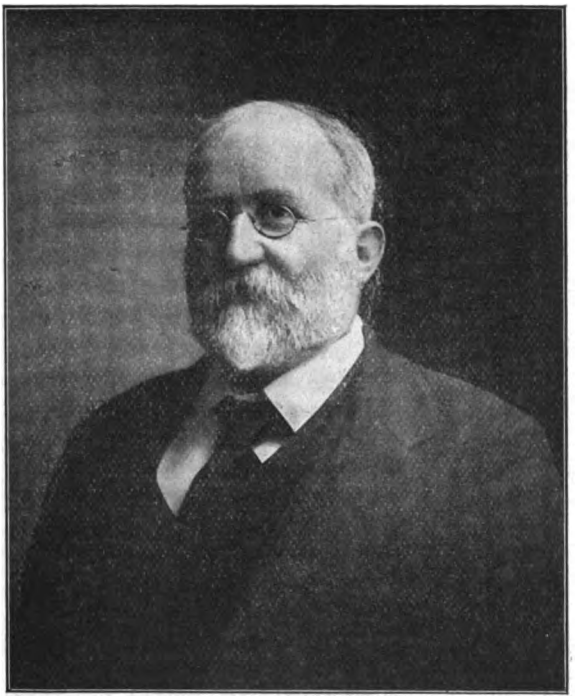
Generous-hearted citizens added to the educational fund, until schools were established in St. Paul's Parish, Goose Creek, St. Thomas and St. John's. These schools accomplished great good. The funds were well managed and in the process of time the surplus was invested and became an endowment fund, from which the schools were improved and the good results lasted till the Civil War, and in some cases even to the present day.

In 1734 a free school was opened at Dorchester, a town that had been settled in 1696 by a colony from Massachusetts under Rev. Joseph Lord, whose daughter is the heroine of two popular novels of recent date, "The Lass of Dorchester" and "Betty Blue." Dr. Ramsey says "this school furnished a means of education to the youth of the Province in the classics and the elements of mathematics and the principles of the Christian religion."

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With increase of wealth and prosperity came an increase of love for learning. During colonial times many educational and charitable associations were formed. The South Carolina Society, organized in 1737, employed teachers, taught and clothed poor children, besides extending aid to indigent members and their children. The Winyah Indigo Society, of Georgetown, was incorporated in 1757, and exists today as the Georgetown Graded School. Such schools prepared the heroes of the Revolution for that trying time in our country's history. During the war period, however, learning did not languish. In 1777 Mount Zion Society, Winnsboro, and the Catholic Society, Camden, were incorporated. In 1778 Salem Society, Camden, and St. David's Society, Cheraw, were founded.

From the Revolution to the War of Secession.—In 1784 an act was passed which has proved to be of more importance to the educational interest of the State than any which preceded it. This act was to establish a college at the village of Winnsborough, a college in or near the city of Charleston, and a college at Cambridge (Ninety-Six). The first two had a long career of honor and usefulness, and are still in active operation, one as Mt. Zion Institute, and the other as the College of Charleston. The College of Ninety-Six, after a



R. MEANS DAVIS,

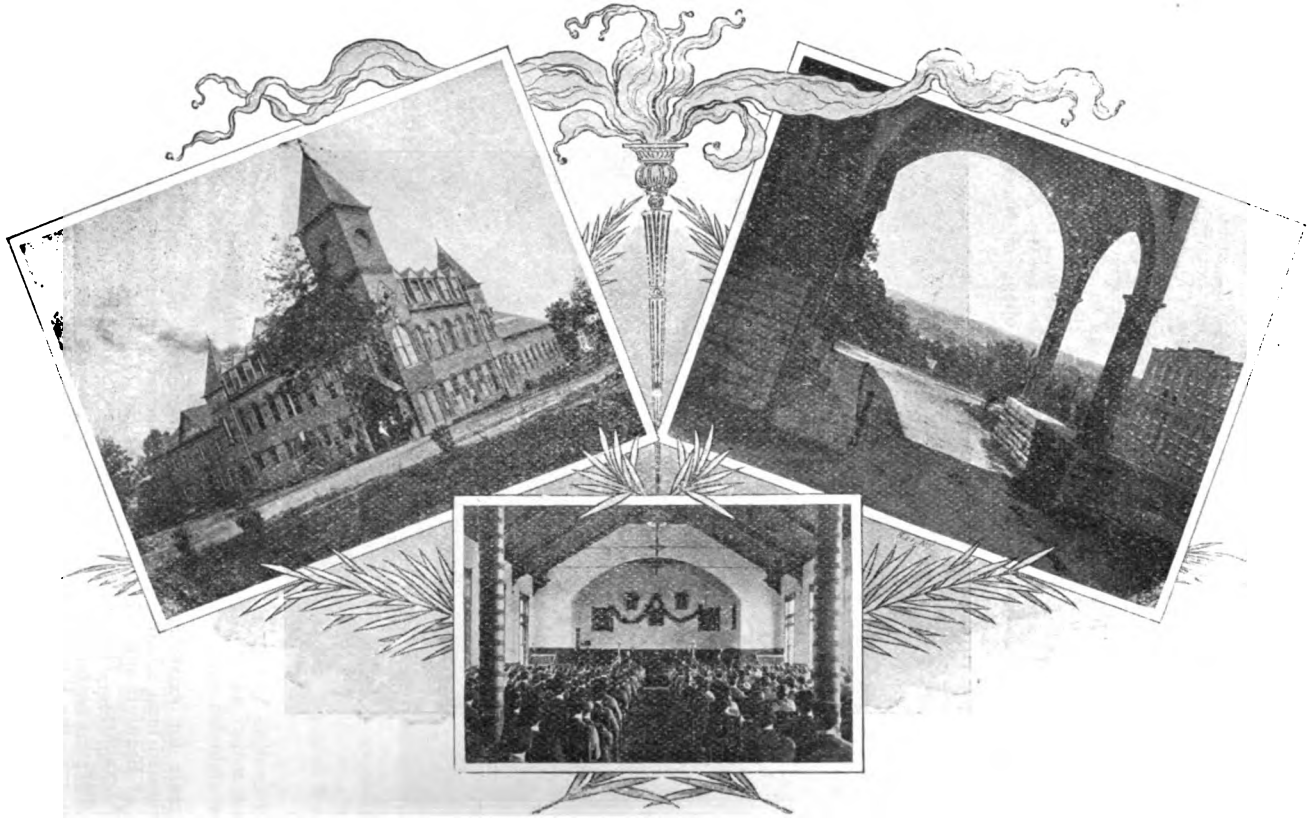
Who did so much for education in South Carolina.

struggle for existence for nineteen years, closed as a college and became a celebrated high school. By legislative enactment other colleges were authorized, one at Beaufort and one in Pinkney District (Union County), called the College of Alexandria. This college and the district alike "live only in the memories of the past."

In 1786 the Beaufort Society and the St. Helena Society were incorporated; in 1789, the Claremont Society (Stateburg); in 1791, the Beaufort District Society; in 1798, St. Andrew's Society, Charleston; in 1799, Upper Long Cane Society (Abbeville); in 1800, the John's Island Society and Mount Pleasant Academy were incorporated.

Besides these, the Fair Forest Academy (Union), Mount Bethel (Newberry), Minerva Academy (Richland), and one of the same name in Spartanburg, are mentioned by Dr. Ramsey as filling positions of great usefulness, showing what

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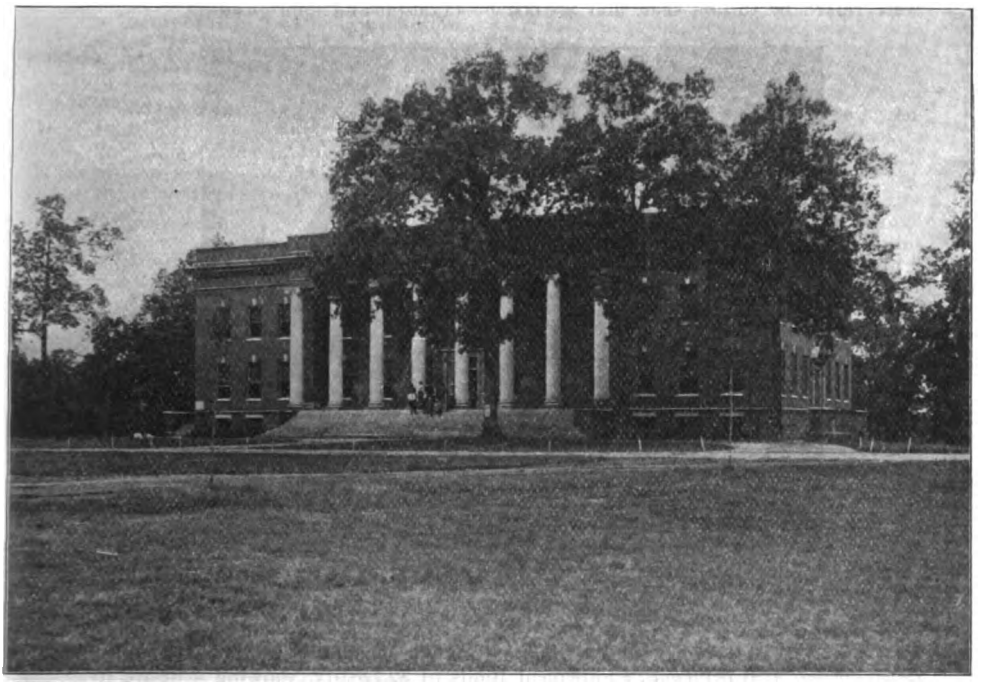
MAIN BUILDING AND CHAPEL—CLEMSON COLLEGE.

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a great impetus was given to education as soon as peace was declared and independence gained.

No special attention was given to free school instruction after the efforts of the early colonial government until the year 1811; only one free school (Orangeburg) being established by the Legislature, which was done in 1798.

In 1811, November 26, Gov. Henry Middleton in his annual message urged the establishment of free schools. The next day Senator Strother, of Fairfield, presented petitions for free schools from citizens of Fairfield, Chester, Williamsburg, Darlington, Edgefield, Barnwell, York, St. Stevens, St. James, Santee, St. John's, Colleton, and St. Peter's. A joint committee was appointed with Hon. Stephen Elliott as chairman. This committee reported a bill which passed the Senate unanimously and was adopted by the House by a vote of 72 to 15. This act established in each district and parish free schools equal in number to the representation of each district or parish in the lower house. Three hundred dollars a year was appropriated to each school, and elementary instruction was to be given to all pupils free of charge. The annual appropriation for these schools was $37,000. Vigorous efforts followed to put these schools into suc-



AGRICULTURAL HALL AT CLEMSON.

cessful operation. Governors in their annual messages showed an earnest desire for a more general diffusion of knowledge. Governors Middleton, 1812; Williams, 1815-16; Manning, 1826; Miller, 1829; Hamilton, 1831; Hayne, 1839; Hennegan, 1840; Hammond, 1842, urged *the endowment of an academy* in each district. In thickly settled communities much benefit was derived from these schools, but in the sparsely settled localities little good was accomplished and the general result was unsatisfactory. Increased efforts were, however, made to insure success instead of abandoning the attempt. A committee, Rev. Stephen Elliott and Rev. J. H. Thornwell, D. D., was appointed in 1838 to confer with the various school commissioners and suggest improvements. Their report contained, among other contributions, a very carefully prepared paper by Hon. Edmund Bellinger, of Barnwell, showing that in twenty-seven years the average attendance for the State was 6,018 pupils and the annual expenditure $35,000. The largest attendance in any one year was 10,718 in 1833, and the greatest annual expenditure was $48,951, during which year the attendance was only 3,002.

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There was lack of *supervision* and the funds were not judiciously handled. The committee recommended that one or more capable persons be appointed with liberal salaries to manage and supervise the free schools and properly distribute the apportioned funds.

In 1846 Hon. R. F. W. Allston, at the request of the State Agricultural Society, prepared an elaborate report and presented it to the Legislature, showing the necessity of supplementing the State appropriation by local taxation of an equal amount.

In 1852 the Legislature passed an act doubling the appropriation, making it $74,400. This had the effect of increasing the attendance the first year to 17,000.

In 1860 the attendance was 18,915. In 1863 there were 823 schools, 845 teachers, 10,811 pupils.

This system of schools bore but little fruit. There were some great obstacles in the way of success; first, the white population was widely scattered; second, the better class would not patronize them, as they were regarded as pauper schools; and third, many private schools sprung up on every hand, and the people did not feel the need of the free schools.

In 1850 $510,879 were expended in South Carolina for education, and $410,430 were raised by tuition fees, and $79,099 by taxation and appropriation.



SOUTHERN PRESBYTERIAN THEOLOGICAL SEMINARY, COLUMBIA.

In 1860 the sum expended was $690,412, of which $420,944 came from tuition fees, $135,813 from taxation and public funds, and $133,735 from endowment, representing, at 6 per cent., endowment funds of $2,228,917, showing a desire to make our educational institutions permanent. It is worthy of note that in 1860 South Carolina ranked fifth in the list of States in the amount of college endowments, and sixth in the income of her colleges.

As the clouds of civil war began to threaten, these schools and colleges closed one by one and the pupils and teachers passed from classic shades to tented fields. Some school buildings were destroyed, some converted into hospitals for the sick and wounded, some into homes for the refugees from the devastated regions of the State, who were compelled to flee for shelter from the vandalism of the invading foe.

The last call for troops in February, 1865, took into the field every white male from sixteen to sixty. The year 1865 was most disastrous to every interest. The pangs of defeat were intensified by the pangs of hunger, and the desire for knowledge gave place to the cravings for bread.

After the War of Secession.—In 1866 a general reopening of schools began. The Legislature reorganized South Carolina College as a university, with three departments, Literary, Law and Medicine. Private colleges set themselves bravely to the task of repairing their shattered buildings, collecting their scattered student-body and replenishing bankrupt treasuries. Schools and academies opened their doors to the youth of the land with the hope that progress would be rapid.

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But this hope was short-lived. An organic revolution soon occurred which shook society to its foundations and wrought changes more violent than those caused by the cruel hand of war.

A new Constitution in 1868 was adopted, the old forms of government, the courts and the cherished institutions were changed. New law-makers brought new ideas and new methods. The old system of private institutions passed away to be supplanted by a new system of State instruction for rich and poor alike. Here was the *real beginning* of our public school system of today, which now occupies a most prominent place in the public mind and in public legislation.

With the adoption of the amendments to the Federal Constitution and the new State Constitution in 1868, there was a thorough reconstruction of the State Government, and an entirely new element was elevated to the control of public affairs.

PUBLIC SCHOOLS.

Incorporated in this Constitution was a system of public schools which provided for the election of a State Superintendent of Education and for subordinate officers in the different counties for the management of schools and the improvement of teachers. Provision was made for raising necessary school funds and *for a compulsory attendance.* The sources of revenue were threefold: first, an annual legislative appropriation; second, a poll tax; third, a voluntary local tax. The system was good enough in theory, but in practice it proved a failure, owing to the ignorance and dishonesty of those connected with the management. It was tried for eight years under the first State Superintendent, J. K. Jillson, who made repeated complaints of the diversion of school funds to other purposes, and in his last report for 1876 shows an aggregate deficiency of $324,058.40. Besides, in almost every district there existed school claims greatly in excess of appropriations, thus swelling the debt to still greater proportions. In 1876 the State was rescued from misrule, and a change of government came, since which time the charges of dishonesty have totally ceased. This is largely due to Capt. Hugh S. Thompson, whose zeal and ability as State Superintendent for six years brought order out of confusion and placed our system of public schools on a sure and firm basis. Instead of an annual appropriation of a fixed amount, a constitutional amendment was adopted in 1876, providing for an annual levy of two mills on the dollar for public schools, to be expended in the county in which it is raised, thus insuring stability and confidence in the system. The poll tax is also devoted to educational purposes and the adoption of local option taxation in a few districts rested with the property holders.



SOUTH CAROLINA MILITARY ACADEMY.

When the Constitution of 1895 was adopted it carried with it a constitutional property tax of three mills on the dollar for school purposes, and made local option taxation general, the poll tax remaining the same. The school law now permits the division of counties into school districts of not less than nine nor more than forty-nine square miles, managed by local boards of trustees.

STATE AND COUNTY OFFICIALS.

The State Superintendent is a constitutional officer elected biennially by the people, giving a bond of $5,000 and receiving a salary of $1,900. He is also allowed a clerk and a stenographer.

He exercises general supervision over all the public schools of the State. With the advice and aid of the State Board of Education, he is required to secure a uniformity of text-books, and to perform such other duties as may be prescribed.

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The State Board of Education consists of the Governor of the State, the State Superintendent of Education, both *ex-officio*, and seven persons appointed for four years by the Governor, one from each Congressional District. This Board meets regularly three times a year, and oftener if necessary, at the call of the chairman, the Governor, and the Secretary, the Superintendent of Education. It renders final decisions upon all questions of appeal from the county boards. It adopts rules for the government of the schools; it prescribes standards of efficiency for teachers; it examines teachers and grants State certificates, and also prescribes text-books for a period of not less than five years. In each general election in each county a County Superintendent is chosen, giving a bond of from $1,000 to $5,000, and receiving a salary regulated by the Legislature upon the recommendation of the legislators from that county. He acts as an organ of communication between the County and State Superintendent of Education; he apportions the school funds among the several districts in his county; he visits the schools; he makes suggestions for their improvement; he makes an annual report to the State Superintendent of Education.

The County Board of Education is composed of the County Superintendent of Education and two persons appointed by the State Board, to serve two years, at $3.00 a day, not to exceed $21.00 and mileage. It conducts the county examinations for teachers upon questions prepared by the State Board, arranges school districts, appoints school trustees and acts as a court of appeals in all disputes between trustees and teachers, or factions.

Three school trustees for each district are appointed every two years by the County School Board, and are entrusted with the general management of the school affairs in their respective districts, the location and erection of school houses, the employment and payment of teachers, the suspension or dismission of pupils, calling of district meetings, and the visiting and supervision of schools.

TEACHERS.

Every teacher in the public schools of South Carolina must be of good moral character, and must hold a certificate issued by the State Board, County Board, or the City Board of Charleston.

Three grades of excellence are recognized in the issuance of certificates. The first may be renewed for two years without examination; the second and third last for two years, but cannot be renewed except upon examination.

Teachers are required to file monthly reports of enrollment and attendance with the branches taught.

CURRICULUM.

In every school shall be taught, as far as practicable, spelling, reading, writing, arithmetic, geography, English grammar, history of the United States and of the State, civics, agriculture, physiology, morals and good behavior, and such other studies as shall be prescribed by the State Board. In some schools higher instruction is also imparted.

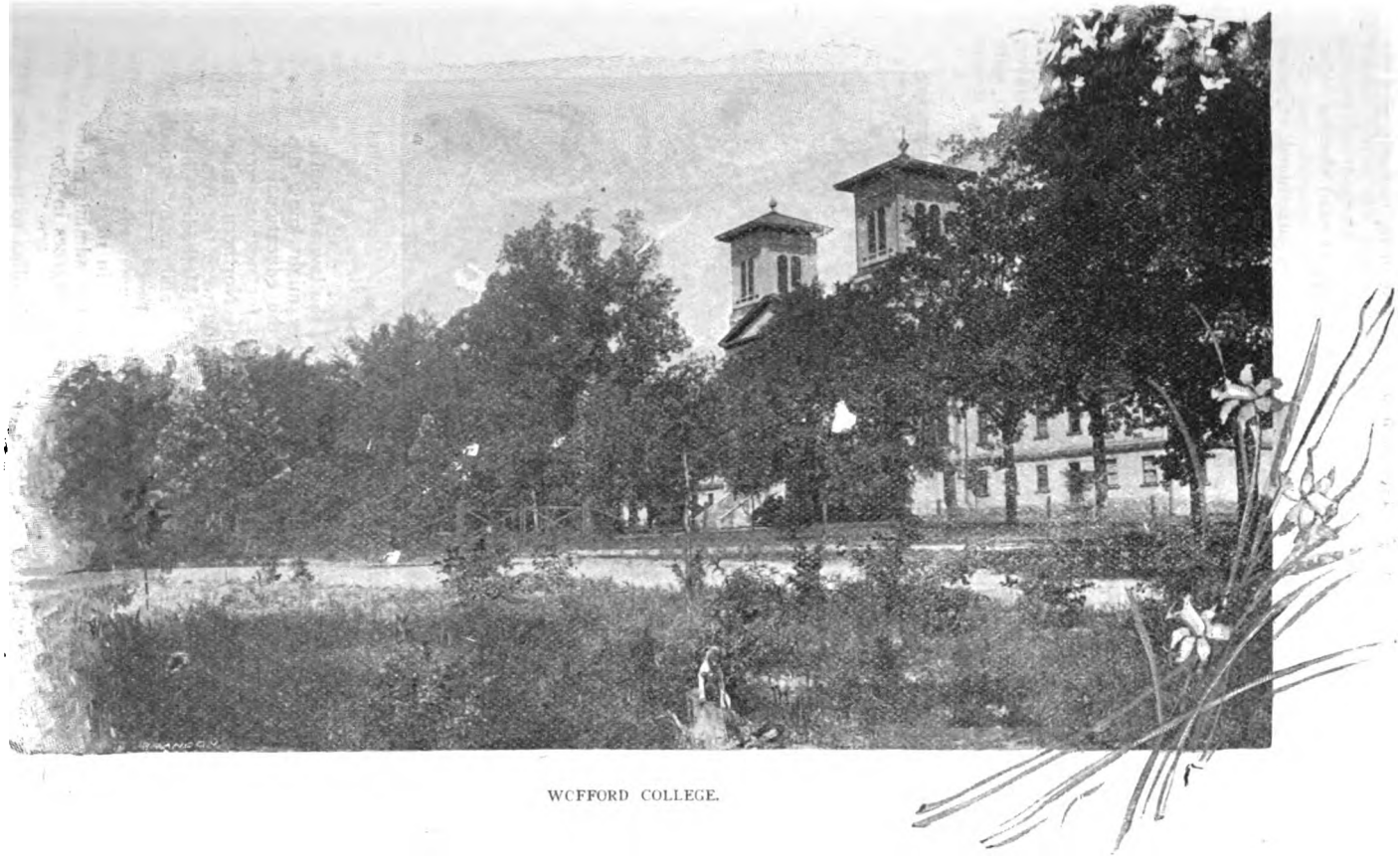
The school age is from 6 to 21 years.

PRESENT CONDITIONS.

The public school system of South Carolina now compares favorably with that of any State in the Union in efficiency, method and amount expended. The sources of revenue are the constitutional three-mill tax, the special local tax, the poll tax, the tax on dogs, and in about two-fifths of the counties the Dispensary tax.

In every county there are one or more graded schools running nine months in the year, with modern, well-equipped buildings, supported by special levy in addition to the regular three-mill tax. These schools are as well conducted and graded, and the course of study as thorough and full, as in any point of the United States. Besides, in many of the rural districts there are schools supported by special taxation, which are doing excellent work. The schools are in better condition than ever before, because of the general improvement in the standard of teachers, increased interest on the part of trustees and parents, the introduction of school libraries, and a public sentiment in favor of better schools and better school houses. In April, 1904, a plan was adopted by the State Board by which the rural schools could obtain at very low cost school libraries.

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WOFFORD COLLEGE.

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Since that time more than 1,000 libraries have been put in the schools, and the demand and desire for them is ever growing.

EDUCATION OF THE NEGRO.

Soon after the settlement of South Carolina, slavery was introduced. Coming directly from Africa, the negroes were forced to learn the English language and to embrace the Christian religion. The "Society for the Propagation of the Gospel in Foreign Parts" was active in providing for their spiritual welfare. In 1705 Rev. Sam'l Thomas reported that "above twenty negro slaves regularly attended church in Goose Creek Parish and were able to speak and read the English language."

The first school for their education was established in 1744 by Alexander Garden. This work was further carried on by the religious training of the negroes on every plantation and in every household. The constant association of the slaves with their superiors was in itself an education of no mean order. Their religious and literary training went on for a long time, until several insurrections gave rise to the opinion that it was dangerous to educate slaves, as it fostered within them a spirit of insubordination. Consequently, in spite of the earnest protest of many of the leading men of the State, in 1834 it was forbidden by law to give the negro instruction in reading and writing.



A COUNTRY SCHOOL.

Many God-fearing men and women, in defiance of the law and public opinion, boldly taught their slaves to read, in order that they might know the "way of Life." The war brought chaos and confusion in the educational interests of the State, but at the cessation of hostilities schools for negroes were founded and maintained by the large and generous gifts of Northern philanthropists. Among the most potent agencies for negro education were the American Missionary Society and the Freedmen's Aid Society of the Methodist Church. The Baptists and Presbyterians also worked vigorously and many schools were established.

But the general education of the masses devolved upon the people of this section. On the reorganization of the State Government in 1868 a public school system was provided. The plan was thorough, but the administration during Reconstruction was inefficient. The enrollment of the negroes in 1870 was only 8,163, but in 1906 it swelled to 171,022.

It has ever been the policy of the people of South Carolina to treat the negro right, and especially to give him the advantage of a good common school education. When they were emancipated there were few of their own race able to instruct them. So when the public school law went into operation in 1868 many educated Southern white men and women taught in the negro schools until

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there was a sufficient number of teachers of their own race prepared to do this work. There are negro schools in every school district in the State, graded schools for negroes in every town where such schools exist for whites. The negro schools have their own trustees, and, as far as the law will allow, govern their own schools. Further than this, they are aided in building their school houses and carrying on their schools by their white friends to an extent that would astonish the cavillers who say that the law discriminates against the negro. The truth is that more is done for the education of the negro in the South than is done for any class of foreigners in any other portion of the United States, despite what is said by biased critics. The State has established a college for the higher education of the negro, and maintains it with liberal appropriations. Since the days of Reconstruction leading business men, politicians, legislators, and Governors in their annual messages, have all advocated the education of the negro upon the proper lines. Gov. Wade Hampton, in his first inaugural address, ably, earnestly and eloquently pleaded that proper steps be taken to educate the negro and emancipate him from the thraldom of vice



COUNTRY SCHOOL SCENE.

and ignorance. This has been the policy of the State Government ever since. Today there are about as many negro colleges in the State as for whites. There are 2,350 negro public schools and 200 negro graded schools. The negro is receiving proper treatment. No people on the face of the earth would act toward him with as much consideration as the Southerner.

ACADEMIES.

The "old field school," or academy, has played a most conspicuous part in education in South Carolina.

Many of her sons who became distinguished on the bench, at the bar, in the political field and in the pulpit received their inspiration and impetus from the education given them in the academy schools.

The necessity for these schools arose from the fact that there were no colleges in the State until after the Revolution. The Scotch-Irish settlers in the upper part of the State were ardent advocates of good education, and wherever they went they built first a shelter for themselves and then an academy. These schools could boast of no handsome buildings and large equipment, but only of their high standard of excellence. These schools were conducted by men of education and culture, who advocated that education was more a training of the mind than a storing of knowledge. Thoroughly drilled in mathematics, languages and sciences, students from these schools readily entered the junior class

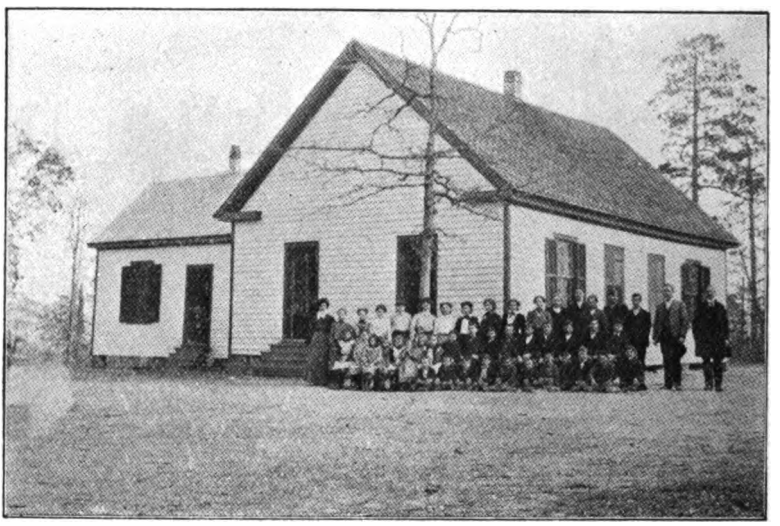
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at Princeton and Yale. The good results of the training given is best seen in the prominent men they educated.

In York District there was the famous school at Bullock's Creek, over which Rev. John Alexander and Aaron Williams presided for years, and which gave to the world such men as Davis and Sam'l Melton, John and James Hemphill, James H. Saye and William Banks.

At Ebenezer, York District, a school was established in the early days of the nineteenth century by the Associate Reformed Presbyterians, which became so famous that it was called "The Athens of York." Some of its most noted teachers were General Alston and John Leitner Shurley, father and son. It continued in successful operation until 1893, under such men as Pierpont Bishop, Dr. T. J. Strait, and Prof. Jos. H. Wilson. Here W. A. Clark, of Columbia, Capt. Iredell Jones and Rev. J. S. White received their academic education in later years.

The Catawba Academy, of Fort Mill, was most successfully operated by E. C. Kuykendal, J. W. Harrington, Butler and Gadsden Alston, A. R. Banks, John A. Boyd and T. H. de Graffenried, from which Hon. L. W. Spratt, said to be author of the Ordinance of Secession; John M. White and Samuel E. White and many other prominent men of the State received their preparation for college, and in more recent years William Mack, LL. D., of New York, Dr. J. D. Nisbet, one of the leading physicians of the country, and I. Stockton Axson, Professor of English in Princeton University, Wallace T. Palmer, D. D., successor to his uncle, Rev. B. M. Palmer, D. D., and Capt. Geo. H. McMaster,



PUBLIC SCHOOL.

U. S. A., the Dicks, Coopers and McCutcheons, of Sumter; John L. Douglas, Professor of Mathematics at Davidson College, N. C., and Sol Reid McKee, Professor of Physics and Astronomy at South Western Presbyterian University, Clarksville, Tenn.

In Lancaster District was the "Waxhaw Academy," where Andrew Jackson, Gov. Miller and Gen'l Blair received their training for life. The famous "Franklin Academy," at Lancaster Court House, where J. Marion Sims, a physician of world-wide reputation, the Witherspoons, Crawfords, Curetons and Masseys were educated.

In Camden was the celebrated school of Lesslie McCandlis. In Edgefield was the school conducted by Robt. L. Armstrong.

In Anderson was the well-known school of Wesley Leveritt. His most famous pupil was Gov. Joseph E. Brown, of Georgia.

The Christopher Cotes School, in Charleston, was one of high merit. Paul H. Hayne, the poet, was a student at this academy.

There was the Columbia Male Academy, which at one time was under the supervision of that matchless scholar and grand and noble man, James H. Carlisle, now at Wofford College. In later years its most prominent teacher was Gov. Hugh S. Thompson. From this school many were educated who are now filling positions of honor and trust.

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At Winnsboro was the Mt. Zion Academy, where J. W. Hudson was principal for twenty-seven years, teaching with earnestness and vigor and drawing students from all of the Southern States. At the time of his death twenty-two members of his highest class were admitted into the South Carolina College without examination, as a tribute to his memory and the splendid preparation he gave for college. A handsome monument, erected to his memory by his former students, now stands on the college green. The last principal of Mt. Zion was R. Means Davis, of precious memory. Under his administration and influence it was merged into the Winnsboro Graded School. Among the many prominent men who received their education under Mr. Hudson are Gen. M. C. Butler and Capt. J. C. Foster, of Lancaster.

The Newberry Academy did fine educational work under the supervision of Rev. John Foster and Charles Strong, Chancellor Johnstone, Judge O'Neall and many other men of sterling worth were here first taught.

At Fishing Creek was a school conducted by Judge John Gaston and wife, where many men who afterwards became distinguished, were educated.

St. David's School, of Cheraw, drew students from all parts of the State. Some of the pupils of this school were Ezra Pugh, Sam'l Wilds and Chas. Motte Lide—all prominent in South Carolina history.

In Abbeville was the school of James Lesley, where Edward Noble, Whitfield Brooks, J. M. Lipscomb and Judge McGowan received instruction. In the same section was another school taught by M. J. Williams, where Gen'l W. M. Gary, Judges Kershaw and Wallace received their education.

The Willington School, Abbeville District, became more famous than any of these academies through the teaching of Moses Waddell, its principal. Some of the men who owe much of their success in life to the inspiration given them by this wonderful preceptor were: John C. Calhoun, James L. Petigru, Judge A. B. Longstreet, George McDuffie, W. H. Crawford, W. D. Martin, Hugh Legaré, George W. Crawford, D. L. and F. H. Wardlaw, N. P. and P. M. Butler. One of his sons, John N. Waddell, became prominent in the educational world as Chancellor of the University of Mississippi and also of the South Western Presbyterian University, Clarksville, Tenn.

In Chester District at Mt. Dearborn, Catawba Falls, it is said that the United States Government decided to have a military post and training school for soldiers, an adjunct to West Point. An arsenal was built from 1795 to 1802 in the shape of a rectangle on a level plateau on a hilltop overlooking the Catawba River. It was surrounded by a brick wall and at each corner was a parapet. The barracks for soldiers were built quadrangular around the main building, which was three stories high, intended for officers' quarters and class rooms. For several years a post and a military school were maintained, and a company of United States soldiers and officers were kept here. For some reason the post was discontinued and the buildings abandoned and sold to the State, and in 1834 the State sold to private individuals, and now scarcely a trace of what was a few years ago beautiful Mount Dearborn remains. Gen'l Sumter owned the land and made the title to the United States. Washington is said to have visited this post when it was in operation.

In more recent years were the Patrick Military School, at Anderson; the King's Mt. Military Academy, at Yorkville, under the gallant Col. A. Coward; the school of Rev. J. L. Kennedy, in Pickens County; that of Edgefield, Prof. Gwaltney, and many others of equal fame. All of these have been absorbed by the public schools of today. Outside of a few denominational high schools, like the fitting schools of Wofford and Furman, the Presbyterian school of Florence, the Bethany High School in York, and one or two private high schools in Charleston—Charleston High School, University High School, Lucas High School—one in Columbia and one just established in Spartanburg, there are no academies in South Carolina.

This result has come from the effort of the State to educate her youth in all stages, from the kindergarten to the university. The effect of the recently enacted high school law will be to still further diminish the number till in a few years there will scarcely be left a private school.

The academy has served well its noble purpose. Its history is a part of the State. We cherish its memory for the lasting good it has accomplished and the faithful and useful life it lived. But we hail with joy the day when the State shall furnish the opportunity to every son and daughter to obtain an education from the primary grade to the collegiate course.

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COLLEGES.

There were two different streams of settlers in South Carolina, the one flowing over the lower country between the years 1670 and 1750, the other over the country above Columbia, beginning about 1750. A spirit of antagonism grew up between the two sections. The lower section represented the Church of England; the upper the Scotch-Irish Presbyterians. The one had the wealth, the other the population. It was the old story of the Puritan and the Cavalier.

For some years prior to the Revolution there arose a spirit of jealousy and ill-feeling between these two sections, which increased to such an extent that the wisest men of the colony felt that something must be done to bring about a better feeling. It was felt that nothing would be more conducive to this end than a State college, where the young men from the different sections would be brought together in one common institution.

As there was no college in the Province for the purpose of giving the higher education, parents were forced to send their sons abroad, and only the rich could avail themselves of this privilege. As it is elsewhere stated in this chapter, at least five different attempts to establish colleges had been made, but proved abortive. Hence there was a growing demand for a college in some central part of the State for these two reasons: for the purpose of high education and for the purpose of uniting the two sections.



SCIENCE HALL—SOUTH CAROLINA UNIVERSITY.

Gov. John Drayton, to whom belongs the credit for beginning the movement, suggested the founding of a *State College,* to which the youth from all sections might go for higher education. This suggestion met the approval of the people, and in 1801 South Carolina College was established by the Legislature. The wisdom of this action was shown that in a short time the two sections were drawn closer together, and the youth of the State generally ceased to go to Europe to finish their course. As was recently said by Bishop Capers in speak-

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ing of South Carolina College and the South Carolina Military Academy, "They are mighty agencies, uniting our people."

STATE COLLEGES.

UNIVERSITY OF SOUTH CAROLINA.

This institution was incorporated by an Act of the Legislature, December 19, 1801, as the South Carolina College, upon the urgent recommendation of Gov. Drayton in his message to that body. An appropriation of $50,000 for buildings and $6,000 annually for salaries was made. The Board of Trustees met and organized in February, 1802, and buildings were erected in 1804. In April of the same year a faculty was chosen and Rev. John Maxcy was elected President. He served faithfully, acceptably and with distinguished success for sixteen years, until his death in 1820.

In January, 1805, the College opened its doors for students, and received William Harper as first matriculate, afterwards Chancellor of the State, and one of the ablest and profoundest lawyers that has adorned the American bench. It closed its first year in July with twenty-nine students, and from this time has continued to increase in honor and usefulness.

To the South Carolina College and its influence is due the prominence of her sons in the national councils, and the high sense of honor that marks their course in life. From such learned masters as Maxcy, Cooper, Lieber, Preston, Thornwell, Ellet, LeConte and Henry, the youth imbibed lessons in political economy, history, government, eloquence, logic, Greek science and other branches.

After the disastrous presidency of Dr. Cooper (1820-1834), the College was restored to the confidence of the people by Hon. Robert W. Barnwell, during whose presidency several new buildings, among them the library, were erected. Two other distinguished presidents of the ante-bellum period were Hon. W. C. Preston and Dr. James H. Thornwell.

As the patronage of the College increased, new buildings became necessary, which were erected 1845-1846. In 1847 the roll of students was 221. The success of the College continued until the Civil War.

A company was formed within its walls for State service, which afterwards enlisted for the war in the Confederate Army. In 1862 College exercises were suspended and professors and students were called to bear arms for their beloved South. During the war the buildings were used as a hospital for sick and wounded soldiers.

In 1866 the College was reopened as a university, Robert W. Barnwell a second time being called from private life to the presidency. Schools of law and medicine were added to the academic department and hundreds of earnest students attended. In 1869 the reorganization of the Board caused the resignation of some of the faculty.

In 1873 a radical change was made as the doors were thrown open to all students, regardless of race and color. The professors all resigned and a new faculty and a new class of students came into occupancy.

In 1877 the institution was closed by the Legislature and remained closed until 1880, when the University was reopened with two branches, the South Carolina Agricultural and Mechanical College of Columbia for whites, and Claflin University at Orangeburg for blacks. Hon. Wm. Porcher Miles was elected President of the College at Columbia. In 1882 five additional professors were elected and the attendance of students reached 150.

Mr. Miles resigned to accept other important work, and Dr. J. M. McBryde was made President. At this time three courses of study were offered, one leading to the B. S. degree, on to the A. B. degree, and one to the B. L. degree. There were opened three special courses, Practical Agriculture, Practical Surveying and Practical English. Tuition was free.

In 1889, because of the establishment of Clemson College, when the Agricultural and Mechanical Departments were transferred to that institution, it again became South Carolina College, and as such it continued until 1905, when by Act of the Legislature it became the "University of South Carolina," and is rapidly taking its place among the leading universities of the South.

In 1889, because of the establishment of Clemson College, when the Agricultural and Mechanical Departments were transferred to that institution, it again became the South Carolina College. Its numbers were for a time smaller than at any period in its history except during the last year of Dr. Thomas Cooper's presidency, but under the fostering care of its president, Dr. James Woodrow, and the skilled instruction of such men as Professor R. Means Davis, the South Carolina College gradually regained its former position. In 1905 the centennial

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DESAUSSURE COLLEGE—SOUTH CAROLINA UNIVERSITY.

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of the opening of its doors was celebrated. The Legislature of 1906 changed the South Carolina College to the University of South Carolina. The President is Benjamin Sloan, LL. D.

Ever since its foundation, the College has been intimately identified with the history of the State, whose munificence it has richly repaid by an influence and a reputation which have extended throughout and beyond its border.

It was once said of George McDuffie that the State of South Carolina had been amply repaid for all that she had expended on the South Carolina College in the education of that one man. He was but one of a host of men who have made their State famous among her sister States and are among her best and most influential citizens in all walks of life. Their price in money is the nation.

The College grounds contain about 14 acres, adorned with spacious buildings and set with beautiful trees. Value of buildings is $250,000. Library has over 40,000 volumes, selected with great care by such scholars as Elliott, Thornwell and Lieber. Many of the books are of rare value.

The College is maintained by funds appropriated yearly by the Legislature.

THE SOUTH CAROLINA MILITARY ACADEMY.

In 1789 the land on which the Citadel now stands was purchased by the State for the establishment of a tobacco inspection. In 1822 the Legislature decided to erect on this ground suitable buildings for the deposit of the arms of the State, and a house for the use of the municipal guard. In 1826 the sum of $12,500 was appropriated for the completion of these buildings, and the name *Citadel* for the first time appears on the State statutes—a name now suggestive of arts as well as of arms.

In 1832 $200,000 were appropriated for the purchase of munitions of war, 10,000 muskets, 4,000 pistols, 2,000 sabres, and for the support of the Citadel and Magazine guard.

In 1833 another appropriation of $3,000 was made to build a magazine at Columbia. In 1837 an appropriation of $5,000 for enlarging this was made, and in 1838 another appropriation of $4,000 was added for another building. The grounds secured were two squares, now known as "Arsenal Hill," and upon which now stands the Governor's Mansion.

In 1842, at the suggestion of Gov. J. P. Richardson, Sr., the Arsenal at Columbia, in command of Capt. M. L. Shaffer, and the Citadel at Charleston, under command of Capt. C. R. Parker, both natives of this State and graduates of West Point, were converted into military schools, called the South Carolina Military Academy. Both schools were opened in 1843, provision being made for the entrance of fifty-four beneficiaries and as many pay cadets, the latter paying $200 a year, which covered all expenses. An annual appropriation of $24,000, afterwards increased to $30,000, was made.

At first these academies were independent of each other. An attempt to unite them in 1845 failed, but the Arsenal was made auxiliary to the Citadel, providing for the instruction of the entering class. Thus organized, the Academy was in successful operation from March, 1843, to April, 1865. These years were marked with the lights and shadows of life.

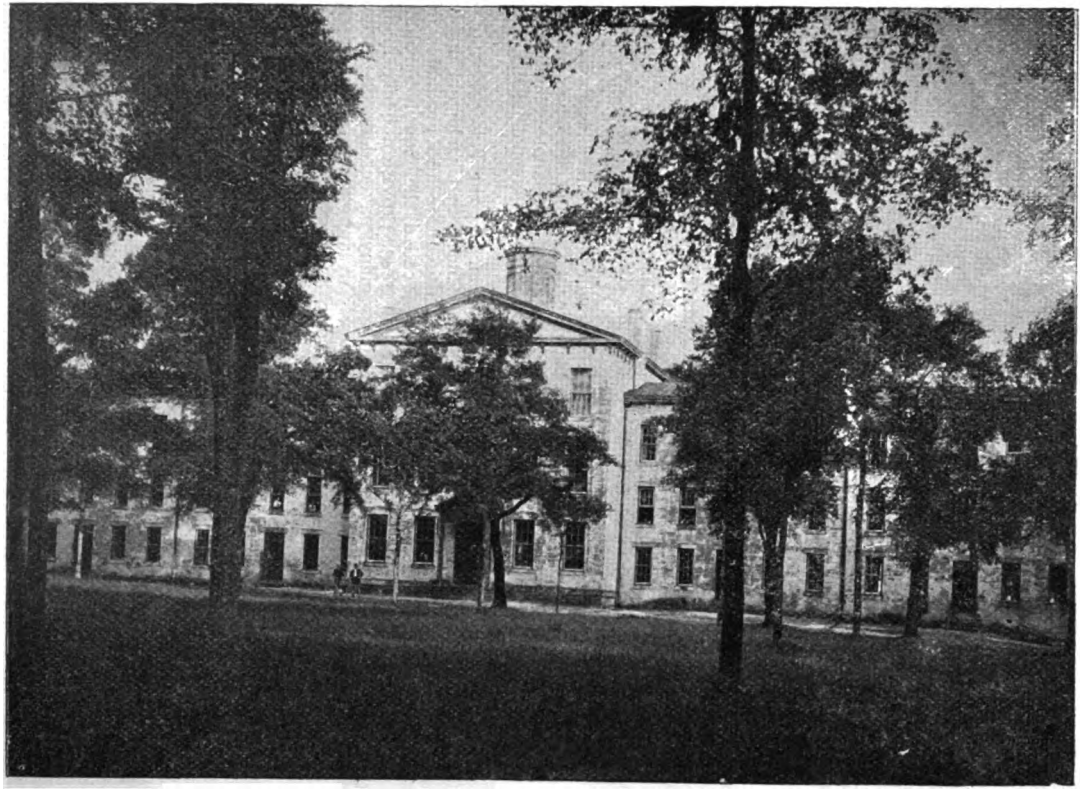
The course of study was, as near as possible, that pursued at West Point, taking even a wider range in some departments, especially in mathematics. Education in this institution was designed to develop the whole man physically, mentally and morally. The result of this training is best known by the career of its graduates. They have done honor to the institution in all the associations of life, winning the prizes awarded to those possessing "the energy and decision of military character."

Of the 240 graduates at the beginning of the Civil War, more than 200 were officers in the Confederate Army, filling every grade from Lieutenant to Major-General, and discharging their duties with such zeal, intelligence and courage that they were distinguished even in that great army of Southern soldiers.

Their first military active service was performed in drilling the Palmetto Regiment, preparatory to its departure for Mexico. A detachment of Citadel cadets fired the first gun of war upon the "Star of the West" as she advanced to the relief of Fort Sumter on the 9th of January, 1861, from Morris Island, Maj. P. F. Stevens commanding.

On the 9th day of May, 1865, Capt. J. P. Thomas, Superintendent of the Arsenal, with the cadets of his command, had a skirmish with Stoneman's raiders, near Williamston, South Carolina, thus firing the last shot of the war east of the Mississippi River. Between these two dates what a tragic history was enacted!

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E. RUTLEDGE COLLEGE. CHAPEL. W. RUTLEDGE COLLEGE.
SOUTH CAROLINA UNIVERSITY.

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INTERIOR CITADEL QUADRANGLE.

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Among all the military schools in the United States, except West Point, the Citadel stands highest in military training. Its graduates are qualified for commissions in the United States Army, and its diplomas give them entrance to the post-graduate courses of the greater universities. Two graduates from each class annually receive commissions as Second Lieutenant in the regular army.

Upon the evacuation of Charleston, the Citadel was seized by Federal forces and was occupied as a garrison until 1878.

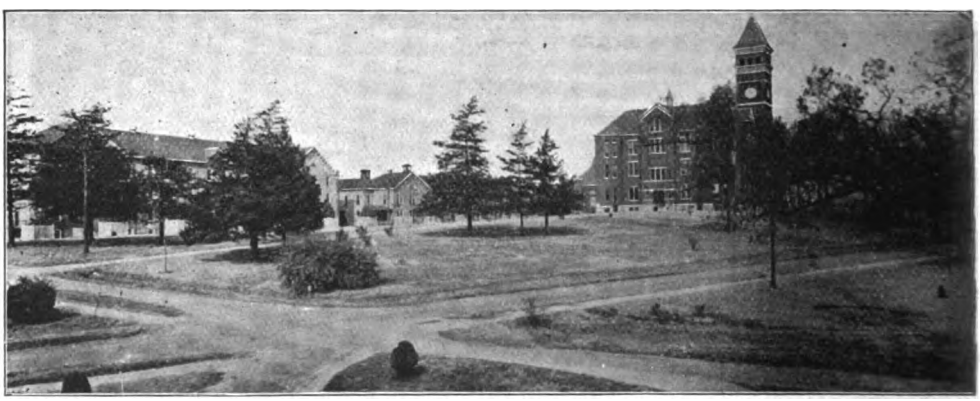
In 1877 General Johnson Hagood and other survivors of the alumni of the Citadel met in Charleston and endeavored to have the Citadel reopened. The Federal Government claimed it as conquered property; the State held that it was private property and through Gov. Hampton made application for its restitution. A bill was introduced in the United States Senate to restore the Citadel to the State upon the condition that the claim for $100,000 for rent and damages by fire be withdrawn. The State refused these terms, and the bill was not passed.

In 1882, however, the building was turned over to the State voluntarily and was taken possession of. The Legislature authorized the education of sixty-eight beneficiary cadets (two from each county) and as many pay cadets as could be accommodated without expense to the State; $10,000 was appropriated for repairs and $5,000 for the expenses of the year. Col. J. P. Thomas was chosen as superintendent. The Academy opened in October, 1882, with 180 students.

The Arsenal buildings were destroyed by Sherman's Army, with the exception of one of the professors' houses, now owned by the State and known as the Governor's Mansion. During the years 1843-5 the superintendents of both the Arsenal and Citadel bore the title of Captain; but when the Arsenal became an adjunct to the Citadel in 1845, the title of the superintendent of the latter became Major.

Since 1882, under Col. J. P. Thomas, 1882-5,; Gen. George D. Johnston, 1885-1890, and Col. Asbury Coward, 1890-1907, the history of Citadel has been one of continued prosperity and success. Efforts have been made to abolish the institution, but it is so dear to the hearts of a great portion of the best citizens of the State that such a step would require an upheaval in sentiment.

There have been enrolled since 1843, 3,664 matriculates, and 728 young men have graduated from this school and gone forth to help advance their native State and to reflect credit and honor upon their *alma mater*. They are found in all the honorable and useful walks of life. Some have been Governors, some have represented their State in Congress, some on the bench, some have been prominent in professional chairs and distinguished in the pulpit, while all have taken leading parts in their adopted callings.



CLEMSON DORMITORIES AND MAIN BUILDING.

CLEMSON AGRICULTURAL COLLEGE.

This college was established by the Legislature in 1889. This action of the Legislature was brought about by the farmers of South Carolina, who, in a convention assembled in Columbia in 1886, resolved that the time had come for the building of an institution, the purpose of which should be to give a college education to the farmers' sons as well as to provide for the education of the

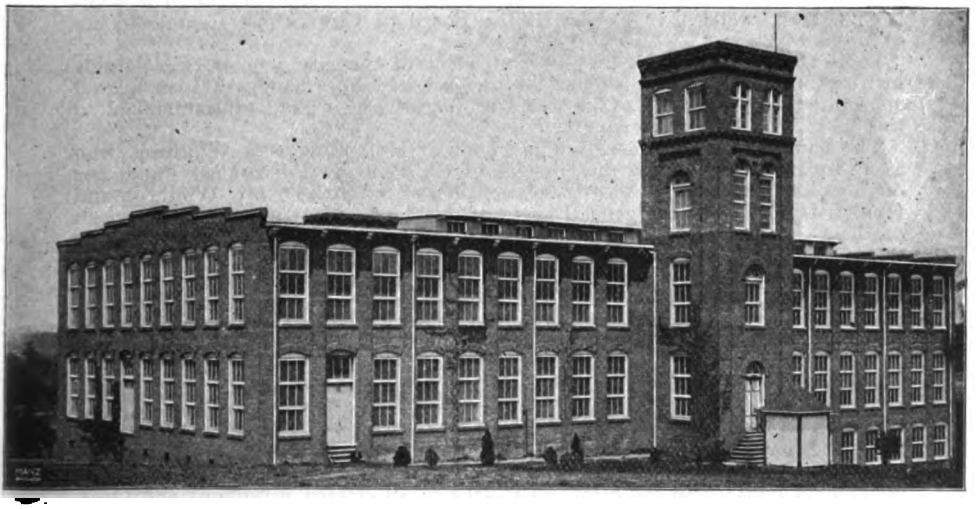
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industrial classes generally. The erection of buildings began in 1890, and the doors were opened for students in 1903. The first class graduated in 1896.

The college is located upon 1,130 acres of land that was donated to South Carolina by Thomas G. Clemson, son-in-law of John C. Calhoun, in 1888. The Calhoun mansion is situated in the center of the campus on a beautiful knoll. The college is governed by a Board of Trustees consisting of seven life members, under the terms of Mr. Clemson's will, and six members elected by the Legislature.

The Board has divided the College into departments, each one of which is in charge of a director. The departments are as follows: Administrative Department; Teaching Department, including the departments of Agriculture, Mechanical and Electrical Engineering, Chemistry, Textile Industry, Academic, Military, and Preparatory; the Fertilizer Department, or Inspection of Fertilizers; Stock Food Inspection Department; Experiment Station; College Farm Department; Veterinary Inspection; Inspection of Plants; State Geological Survey and Chemical Analysis of Minerals; Coast Experiment Station; Farmers' Institutes.

Clemson College gives a most liberal education in Mathematics, the Modern Languages and Sciences. A graduate from this College is fully equipped with a foundation of knowledge which fits him for the active business of life. As



TEXTILE BUILDING—CLEMSON COLLEGE.

is stated in the law establishing the College, there will be a constant demand for men who will develop the natural resources of the country; therefore men are thoroughly prepared for this work by the tuition given in practical Agriculture, Chemistry, Mechanics, Electrical, Civil and Textile Industry.

The success of the College has been phenomenal. More boys apply for admittance than can be accommodated, but a new dormitory with a capacity for 200 is nearing completion, which will enable the College to accommodate 824 students.

In eleven years 396 students have graduated from Clemson College. These are living in 26 different States, but the largest proportion of them are living in South Carolina and helping to develop her resources. Since 1893 nearly 4,000 boys have reaped the benefits of education offered by Clemson Agricultural College, fitting them for becoming valuable citizens.

The College is supported by the privilege tax on fertilizers paid by the manufacturers; interest from the Clemson bequest, $58,539; interest from $96,000 land-scrip endowment given by Congress; annual Morrill Fund, $15,000, also given by Congress; tuition from students; cash from sales from farm and other products; hence it is not a burden to the State.

The Legislature has created 124 beneficiary scholarships in the Agricultural Department, $100 each, and 41 scholarships in the Textile Department at $100 each, requiring $16,500 out of the College income for this purpose. To fully

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develop the Textile Department a factory has been built on the campus, which is equipped with spindles, looms and other mill appliances of every modern make, so that the student may learn by actual work the making of various kinds of yarns and weaves and the machinery necessary to produce each. This is probably the only cotton factory (complete) that is a real integral part of any school in the United States, possibly in the world.

Farmers' Institutes are held annually in various parts of the State, which are attended by about 6,000 farmers, which greatly benefits the farmers and the farming interests.

The Southern Railway Company gives substantial aid in allowing the use of two coaches free of cost. These are fitted up with College products and transmitted from point to point without expense.

WINTHROP NORMAL AND INDUSTRIAL COLLEGE.

For nearly one hundred years the State of South Carolina had made liberal provision for the higher education of her sons. But up to 1891 her daughters were neglected, except that a small annual appropriation was made by the Legislature for the support of one pupil from each county in the Winthrop Training School for Teachers at Columbia. This school was organized November 15, 1886, under the auspices of the Board of City School Commissioners of Columbia.

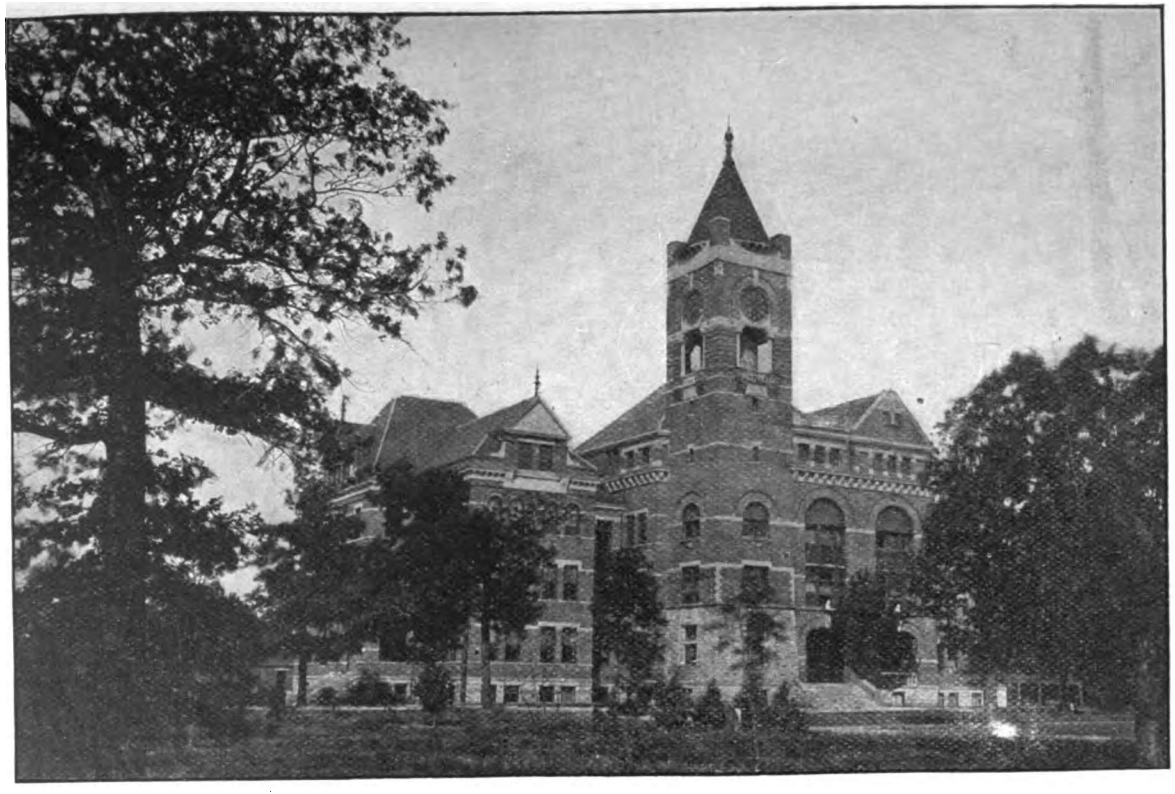
D. B. Johnson, LL. D., the superintendent of the city schools, was largely instrumental in the establishment of this school. For many years an annual appropriation was made by the Peabody Board, which gave substantial aid to this most laudable enterprise.

The name Winthrop was given in honor of Hon. Robert C. Winthrop, who as President of the Board of Trustees of the Peabody Educational Fund, has done so much for the cause of education in the South. To Mr. Winthrop and Hon. J. L. M. Curry, the general agent of this fund, is due much of the success of this school. But to no man, however, is due more credit and honor than to Dr. D. B. Johnson, who has thrown his whole soul and untiring energy into the cause. In 1890 Gov. Benjamin R. Tillman, in his inaugural address, recommended the appointment of a commission to ascertain and report upon the advisability of establishing a normal and industrial school for women by the State. Upon a favorable report by the commission, composed of Prof. D. B. Johnson, Miss Mary Yeargin and Miss Hannah Hemphill, the Act incorporating "The Winthrop Normal and Industrial College of South Carolina for the Education of White Girls" was passed December, 1891. The Board of Trustees located the College at Rock Hill, S. C., and began the erection of suitable buildings in 1892, which were completed and occupied in 1894. From the very beginning this College took deep root in the hearts of the people, meeting with the unanimous approval of the men and women of all classes, conditions and ideas, without regard to differences in politics or religion. The city of Rock Hill was most generous in contributing to secure this College, giving $60,000 in money and other property valued at $40,000—$100,000 in all.

This school has grown from a school of two teachers, nineteen pupils, and one room, in 1886, to a great school of forty-seven officers and teachers, five hundred students, and a plant costing over $300,000, in 1906. It is now a State institution and receives an annual appropriation for its expenses. The State maintains one hundred and twenty-four scholarships in it, worth each $100 and free tuition, leaving only four dollars to be raised by the beneficiary for college expenses for the entire session of nine months. Winthrop College is emphasizing teacher-training and industrial work in accordance with its charter. The total enrollment in its different departments from the beginning to the present time is as follows:

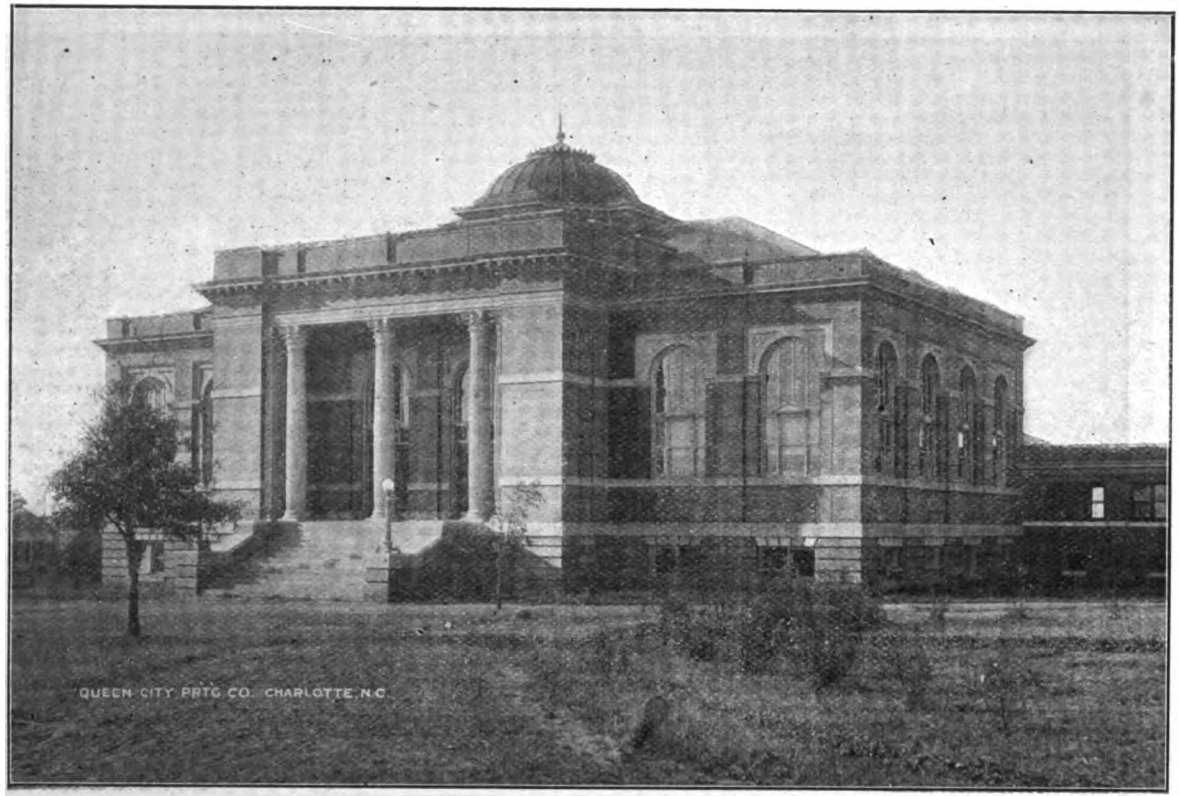
Normal	3,696
Literary	634
Dressmaking, Millinery and Sewing	1,406
Stenography and Typewriting	435
Cooking	997
Horticulture	254
Bookkeeping	143
Drawing and Designing	1,989
Dairying	36
Manual Training	389

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MAIN BUILDING—WINTHROP COLLEGE.

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CARNEGIE LIBRARY—WINTHROP COLLEGE.

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MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.

This school was organized and chartered by the Legislature, first as the Medical College of South Carolina in 1823, and then as the Medical College of the State of South Carolina in 1832. The record of its original founders is blended with the history of Southern Medicine.

The names of Holbrook, Moultrie, Dickson, Prioleau, Frost, Ravenel, Wagner, Geddings, Shepherd, Bellinger, Gaillard, Simms, Miles, Chisholm, are ever to be revered. The alumni have been scattered far and wide, more particularly through the South and West. Many have worthily filled the highest positions as teachers in popular and influential medical colleges. Surgeon-General Wyman, in his address to the graduating classes of 1907, said: "The United States Public Health and Marine Hospital Service has in its membership a number of graduates of the Medical College of the State of South Carolina. These without exception have reflected credit upon the public service and their *alma mater*, and in numerous instances have made such noteworthy contributions to medical science, and have achieved such notable success on the battlefields of epidemics, that they reflect more than credit—they add lustre to their college and to their calling."

The combination of didactic lectures, practical work in the laboratory, and the study and treatment of diseases at the bedside and in the operating room, have been the chief features of the College to attract the confidence and support of the alumni and the profession at large.

The College owns no property except the large and handsome building in which lectures are given, and an expensive and valuable museum of pathological specimens (said to be one of the finest museums in the world), and anatomical preparations.

The College has no endowment, nor has it received any bequests or gifts, with the exception of one from the State, sixty-five years ago, in virtue of which the College gives beneficiary scholarships for one year to seven medical students, one from each Congressional District recommended by the Congressman and appointed by the Governor.

The course of instruction extends over four years, the sessions beginning the first of October and ending the last of April. In connection with this College is also a College of Pharmacy, with a course of two years.

This institution was closed during the Confederate War, but reopened immediately afterwards. The alumni in 1907 numbered about 3,000.

The Roper Hospital has been for many years under the medical and surgical direction of the faculty of the College.

Value of the main building is $75,000
Value of the main hospital is 250,000

Library of 3,000 or more valuable medical works.

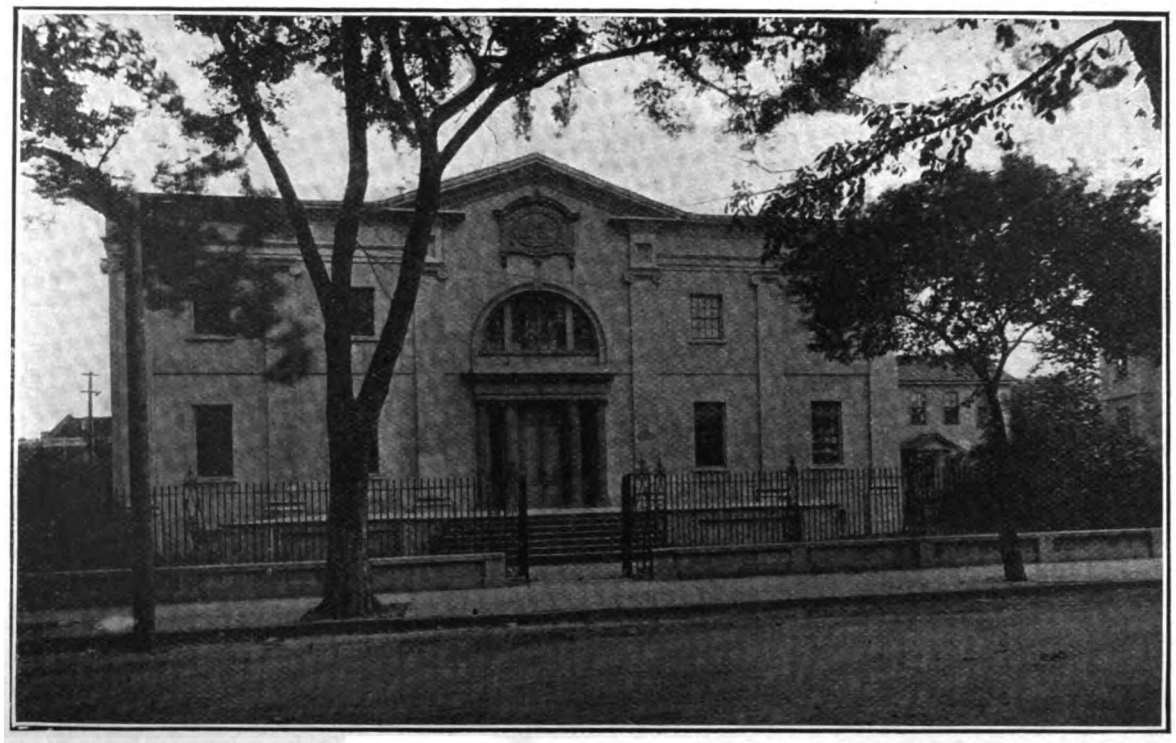
It ranks sixth in age among one hundred and fifty old medical colleges in the United States.

CEDAR SPRINGS (FOR DEAF, DUMB AND BLIND).

South Carolina Institution for the Education of the Deaf and Blind is located at Cedar Springs, Spartanburg County, four miles south of the city of Spartanburg. It is part of the educational work of the State, and its inmates receive the proper and necessary training. Board and tuition are free to those who are unable to pay for the same. There are Literary, Music and Art Departments. The industrial feature is also made quite prominent. For the boys there is woodworking, printing, broom, mat, brush and mattress making, chair seating, etc.; for the girls, house, kitchen and laundry work, sewing, knitting, fancy work in beads, wool and cotton.

From 1832 to 1849 the State sent her deaf children to Hartford, Conn. The State paid the expenses of seventeen pupils at the Hartford School. In 1849 Rev. N. P. Walker established this school at Cedar Springs and eight deaf children were admitted. From this time he devoted his whole time to the education of the deaf. In 1855 a department for the blind was added. In 1857 the school was changed from an individual to a State institution by purchase, and the Legislature made a liberal appropriation for the erection of suitable buildings and for its support. Superintendent Walker died November, 1861. For four years the Legislature failed to appoint a Superintendent, but the school was wisely managed by Mrs. M. L. Walker, wife of Rev. N. P. Walker and

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MEDICAL COLLEGE OF SOUTH CAROLINA, CHARLESTON.

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his able co-worker. She, by her constant encouragement and personal work, made success possible.

In 1866 J. S. Henderson and N. F. Walker were made associate Principals, but the school closed in one year on account of the unsettled condition of the State's finances. In 1869 the school was again opened with Superintendent J. M. Hughson in charge. He resigned in 1872 and N. F. Walker was appointed to succeed him. During this year a building for colored pupils was fitted up on a lot adjoining the institution. On the 17th of September, 1873, the Board of Commissioners issued instructions that "the colored pupils must be domiciled in the same building, eat at the same table, be taught in the same class rooms and by the same teachers, and must receive the same attention and care and consideration as the white pupils." Straightway the Superintendent, officers and teachers resigned. Efforts were made to secure a Superintendent and teachers who would be governed by these instructions, but they failed. Thus the school was closed from 1873 to 1876. Superintendent Walker was then reappointed, and the progress of the school has been uninterrupted. The department for colored pupils was again opened in 1883 in separate buildings. In connection with the buildings is a tract of 157 acres of land. Cedar Springs was known prior to the Revolutionary War as Green Springs. Its present name is from a large cedar tree that stood near the spring. The place is historic. Two battles were fought here between the Whigs and Tories in 1780.

INDEPENDENT COLLEGE.

COLLEGE OF CHARLESTON.

The history of the College of Charleston can be traced back as far as 1770, when a meeting was held "petitioning the Assembly for the establishment of a college in or near Charleston." Many donations and bequests by private citizens were made, amid the excitement of the War of the Revolution and the general prostration that followed nothing further was done. In March, 1785, however, the endowment had increased to $60,000, a charter was granted, and certain lands in Charleston appropriated for the use of the College. In August of the same year the first meeting of the Trustees was held at the State House in Charleston, General Moultrie, then Governor of the State, presiding. Two signers of the Declaration of Independence, Ed. Rutledge and Arthur Middleton, and three of those who afterwards signed the Constitution of the United States, John Rutledge, Charles Cotesworth Pinckney, Charles Pinckney.

In 1790 the College was opened to students, and in 1794 the first commencement was held; among the graduates were Bishop Nathaniel Benson and John Davis Gervais. A new charter was granted in 1791, broader and more liberal in character. However, because of insufficient revenues, the College soon fell into financial difficulties, arising from debts contracted by the Trustees for the erection of necessary buildings and for the salaries of teachers. The result was that for thirteen years the college plan was suspended and a high school, or academy, was substituted. In 1824 such liberal contributions were made by the people of Charleston and the surrounding country that a new building, the center of the present group, was erected in 1828 at a cost of $25,000. In the same year the Hon. Elias Horry founded a professorship of moral and political philosophy by giving his personal bond of $10,000, yielding $500 a year. The interest on this bond was regularly paid until 1863. Thus a most critical transition period in the history of the College was passed and the course of instruction was made more liberal. The *American Journal of Education*, 1828, speaking of the College of Charleston, says: "The course of studies is as extensive as that pursued *at any of our colleges.*"

In 1837 the College was reorganized. The Legislature of the State in this year surrendered and transferred to the city government the property, rights and interest of the College, and the City Council agreed to accept the trust and to provide the means to maintain the institution. Then the Hon. Richard Yearden introduced a bill into the City Council providing for an annual appropriation of $1,000 for ninety-nine years, to be invested as a permanent fund for the support of the College. This bill became an ordinance in 1839. In 1881 the Council repealed this ordinance, but $61,000 remains today as a result of this endowment. Then, for the first time, the College was placed upon a permanent foundation.

In 1847 the scope of instruction was further increased by the founding of a Chair of History and Belles-lettres. The endowment for this chair was raised by popular subscription and amounted to $21,346 from 150 subscribers.

Five years later, 1851, the study of Natural Science was so stimulated by that great American, Professor Louis Agassiz, who lectured for several winters in

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ROPER HOSPITAL—(USED BY CHARLESTON MEDICAL COLLEGE).

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Charleston on biological subjects, that, at his suggestion, a museum of natural history was founded and formally opened by him, and down to the present day this museum has been maintained and developed with special care. In fact, the Charleston museum is known all over the world, and is regarded as the finest museum of natural history on this continent.

In 1855 the Library building was erected from funds appropriated by the State. In 1856, upon the endowment of the Hon. Kerr Boyce, $33,000, eight scholarships were founded, which fund had accumulated at the end of the War between the States to $35,400, and assures today the stability of these scholarships. The most generous donation to the College was made in 1865 by Ephraim Baynard, a South Carolina planter, in bequest of $166,000 in city stock for the benefit of the College. In addition to these bequests, gifts and escheated property have been vested in the Trustees to the amount of more than $70,000. The total endowment has been preserved unimpaired, except for expenditures for the restoration of the buildings after the earthquake in 1886, August 31, and now amounts to about $300,000.

This College today ranks among the very highest in the country for thorough and accurate scholarship. Its faculty is composed of distinguished scholars. The course of instruction is broad and comprehensive. Besides the scholarships mentioned, it offers one worthy young man from each county in the State a scholarship. Owing to its large endowment, there has been little active canvassing for students throughout the State, but under President Harrison Randolph the policy of the College is now more aggressive. Dr. Henry E. Shepherd, now of Johns Hopkins University, was for many years the honored President of Charleston College. There are now fifteen teachers and officers connected with the institution. It has a library of fourteen thousand choice books (14,000), besides access for its students to the library of the Charleston Historical Society. The future of the College of Charleston is bright.

DENOMINATIONAL COLLEGES.

ERSKINE COLLEGE.

This College has a history extending over seventy years, being organized in 1837. At the time of its organization there was not a single institution in this or adjoining States that offered the advantages of a college training under Christian influences. Students from this section were compelled to seek such an education in Northern colleges. This institution, therefore, enjoys the enviable distinction of having been the pioneer in the field of Christian education in the South.

Erskine College is the property of the Associate Reformed Presbyterian Synod of the South, and is situated at Due West, Abbeville County, between Columbia and Greenville, on the Southern Railroad, being one hundred miles distant from the former and forty miles distant from the latter.

Its first faculties were drawn from Northern colleges, such as Jefferson, Pa., and Miami University, Ohio. In later years they have been taken from the Southern colleges. Several of them have taken special courses and degrees at Yale, Harvard, Johns Hopkins, Princeton and Amherst.

The College has endeavored to keep pace with the demands of the age, and the courses of study have been broadened as far as the limits of a faculty of ordinary number will permit. The culture studies, however, still occupy a prominent place in the curriculum. It does not attempt the work of a university, believing that it can render more useful service by doing *thoroughly* the work in its own chosen field. It is well endowed, and draws students from all the Southern States. The buildings are substantial; several of them of modern structure and design. It offers the same courses to women that it does to men, and for this purpose it has special endowments and separate buildings. The library is well selected and has eight thousand choice and valuable books. The College is known the land over for the thorough work done by its professors and its students. Secret fraternities are strictly forbidden; hence the work done by its literary societies is the best in the South.

Its list of graduates contains men who have held positions of honor and trust and are prominent in every profession. One is a prominent journalist of note, J. C. Hemphill; another is a leading lawyer at the national capital, Hon. J. J. Darlington; another is a member of Congress, Joe Johnson; still another, after representing his State for years in the Senate chamber, before his death founded an orphanage and left all his property to it, J. C. Maxwell. But the greatest of its alumni is the sainted William Moffatt Grier, D. D., LL. D., who became

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its President in 1871 and for twenty-seven years safely, ably and lovingly managed the affairs of his *alma mater*, departing honored, revered and cherished by all.

FURMAN UNIVERSITY.

More than two centuries ago, in 1683, the Baptist Church of the South was organized in Charleston, and to this may be traced the founding of Furman University. The Baptists were aggressive. They went first to convert and then to educate. In 1755 a society was formed by the Baptists for the promotion of the education of young men for the ministry, the first for this purpose in the United States, antedating the one in Philadelphia by one year. Jesse Mercer, the father of Baptist education in Georgia, for whom Mercer University, Macon, Georgia, is named, was one of the young men educated by this society. In 1790 a State convention for the cause of education was formed and Richard Furman assumed the direction of the movement and continued till his death in 1825. Under his influence the Baptists of South Carolina founded an academy on the high hills of the Santee. This was transferred in 1827 to Edgefield, owing to the magnetic influence of Basil Manly, Sr. In less than two years it was removed to the high hills of the Santee. Here Prof. Sam'l Furman was added to the force of teachers.

The school remained here, passing through many trials, until 1837, when it was moved to Winnsboro, but in 1848 it was moved to Greenville, S. C. In 1852 Furman University was opened. The Theological Department of the University grew into the Southern Baptist Theological Seminary, in 1859, under that famous quartette, James P. Boyce, John A. Broadus, Basil Manly, and William Williams, as professors.

In 1859 Dr. James C. Furman became President and served until 1879, and as chairman of the faculty till 1881. He was then succeeded by Dr. Chas. Manly, who remained at the head of the University till 1897. Dr. N. P. Montague was then made President and was followed by Dr. E. M. Poteat in 1903, who is now at the head of this institution, which is growing in favor and efficiency under his wise management.

This University furnishes sound preparation for the duties of life; it equips young men for high and intelligent citizenship by developing in them those qualities of heart and mind that shall make them useful to their State and their country. But above all it inculcates those principles that form the foundation of strong Christian manhood. It is in reality a Christian college.

WOFFORD COLLEGE.

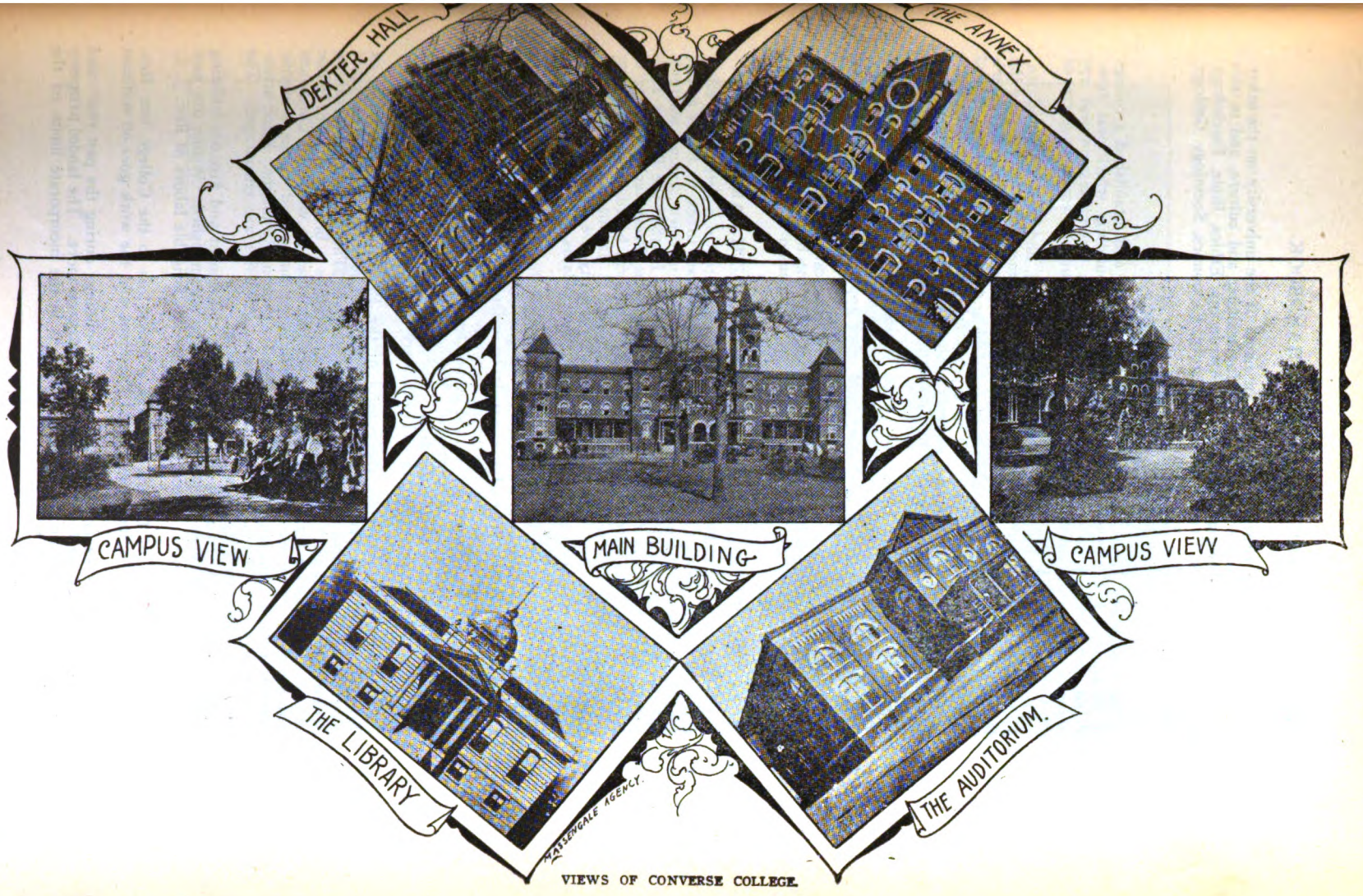
Wofford College owes its existence to the far-sighted philanthropy of the Rev. Benjamin Wofford, a local preacher of the South Carolina Conference of the Methodist Episcopal Church, South, who died in 1850, leaving $100,000 to found a Christian college at Spartanburg.

The College was chartered in 1851 by the State Legislature, and opened its doors for regular work in 1854. Since that date it has not closed its doors for a single session. Even during the war between the States it offered instruction to the few youths who might resort to it at this trying period, and in the midst of the dark days following the war and during Reconstruction, when other institutions were forced to close, Wofford remained opened to all who might come. In spite of the fact that its endowment and resources were swept away by the wreck of war, it was enabled to furnish higher education to the youth of the State by the heroic sacrifices of its professors and the annual contributions of the Methodist Church in South Carolina.

Since those days the history of the College has been a record of steady progress. Its endowment has been gradually restored; the Methodist Church in South Carolina annually assesses itself $7,000 for its support, an amount equal to the interest on an endowment of $140,000, at 5 per cent.; its physical equipment has grown to such an extent that now the College owns for educational purposes and use in its three plants, Wofford College at Spartanburg, Wofford Fitting School at Spartanburg, and Carlisle Fitting School, Bamberg, as many as twenty-seven buildings, representing property valued at $300,000; while its patronage has grown to over half a thousand students in the three institutions, with faculties numbering in all twenty-three professors and teachers.

The Wofford system stands (1) for thorough preparation for college through its fitting schools; (2) for a high grade of strictly college work in the college proper. Its educational ideals have ever been thoroughness of work, accuracy and breadth of scholarship, and sound character. It aims generally to be a strictly first-class college, trying not to do the work of the high school on the

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VIEWS OF CONVERSE COLLEGE.

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one hand, nor aping either the methods or name of the university on the other. Its courses of study are meant to make for training and culture, and to this end it offers the following: Mathematics, Astronomy, Ethics, Bible, Psychology, English, Latin, Greek, French, German, History, Economics, Sociology, Geology, Mineralogy, Chemistry, and Biology.

NEWBERRY COLLEGE.

The Evangelical Lutheran Synod obtained a charter and established a college at Newberry, S. C., erected a large and attractive building, which was completed and occupied in 1838. The enrollment in the second session was 175 students. The endowment in 1860 reached $50,000, and the entire property of the College was $75,000.

From 1861 to 1865 the doors were practically closed, and professors and students obeyed their country's call to arms. The endowment was lost, as was the case with other denominational colleges, by investment in Confederate securities. The College buildings were sold for debt and the institution was moved to Walhalla. It remained there for nine years, struggling with embarrassments, when it was again located in Newberry. Since then the attendance has been increasing, the patronage has become broader, and the outlook of the College is promising.

It has a well selected library of 10,000 volumes, and valuable collection of mineralogical and natural history specimens, known as the Sifley Museum; chemical and physiological laboratory, and other appliances for doing first-class work. There are three departments in the College: Preparatory, Collegiate and Technical. The College has two courses, the classical and philosophical, the one leading to the Bachelor of Arts, and the other to the Bachelor of Philosophy.

The Technical is very successful in meeting the demand for business training and practical life.

THE PRESBYTERIAN COLLEGE OF SOUTH CAROLINA.

The Presbyterian College of South Carolina originated in a determined effort made by the people of Clinton in 1872, during troublous times, to found a high school, at the very time when the constabulary was in town serving warrants for the arrest of so-called members of the Kuklux. In 1880 the Clinton High School became Clinton College; in 1893 it became the Presbyterian College of South Carolina. In 1905 it was transferred by the local board to the representatives appointed by the Presbyteries. Rev. Wm. P. Jacobs, D. D., who had been President of the Board of Trustees for twenty-five years, resigned his position and was succeeded by Rev. Dr. Robert Adams, who has served the body with great fidelity ever since.

The election of Rev. Dr. Neville as President by the Board of Trustees was the beginning of a determined effort on the part of the Presbyterians to make the College a success. The Clinton people, in order to secure the location of the College, turned over $40,000 worth of property and money to the institution. Its lands and endowments are valued at not less than $100,000. A very handsome college edifice has been erected; there are three professors' houses and two dormitories, a large and handsome new dormitory and new refectory. The library numbers 2,500 volumes. There were 130 students enrolled the past session.

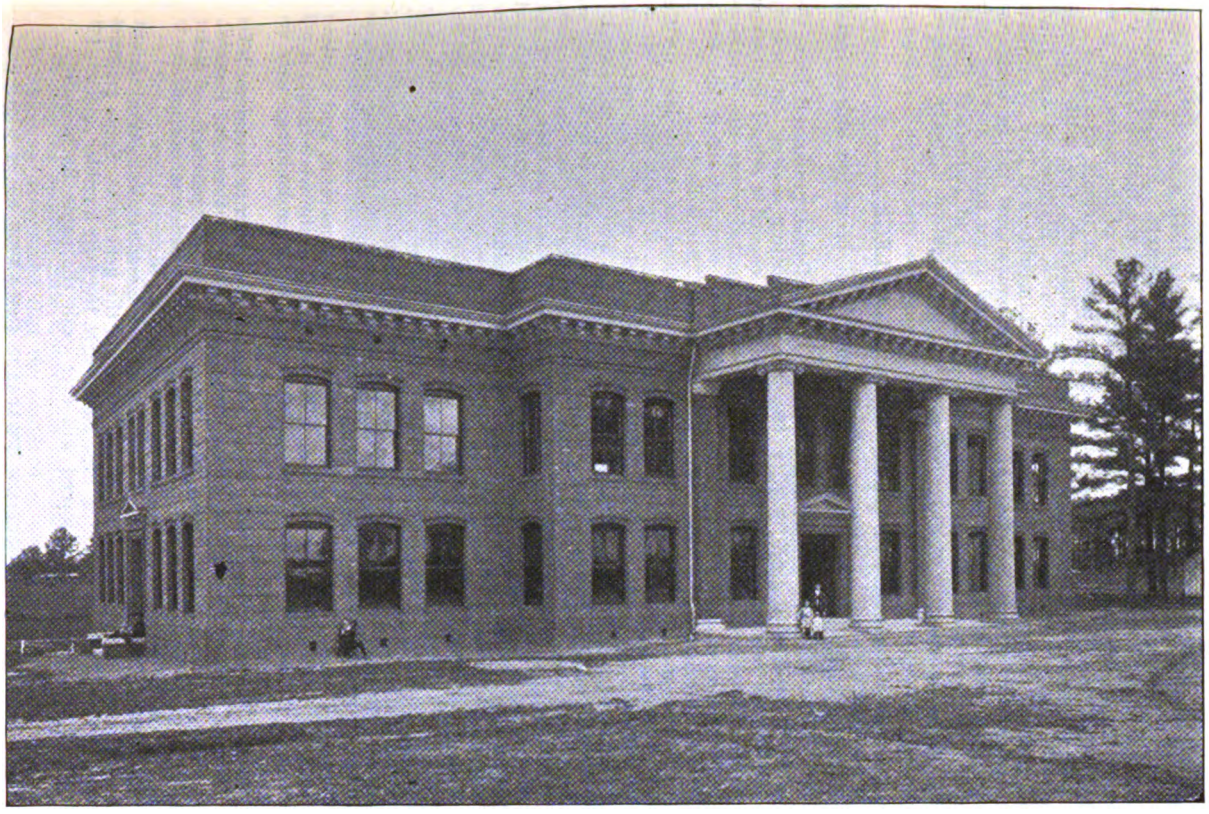
The College is now under the control of the Presbyteries of the Synod of South Carolina, each Presbytery appointing three representatives for three years each. The alumni also elects three representatives. The College is, therefore, strictly denominational; at the same time its scope is a broad one. The Bible is one of its regular textbooks, and the great doctrines on which all Christians agree are taught in its Bible course. Much attention is paid to the scientific course. Both ancient and modern languages are thoroughly taught. Much attention is also paid to oratory and declamation. Athletics are encouraged. The various societies of the College are flourishing.

The College is now aiming to raise $150,000 endowment and $100,000 building fund, and there is every evidence that it will be accomplished. Within the past four months $44,000 have been secured by the indefatigable labors of Rev. J. C. Shive, agent.

The recent death of Dr. Neville was a heavy loss to the College, but Rev. Robert Adams, D. D., has been elected President, and the work goes on without interruption.

The College has expended $40,000 in new buildings during the past year, and now has contracts out for the expenditure of $15,000 more. The landed property of the institution is thirty-four acres. This is in the incorporate limits of the

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ADMINISTRATION BUILDING—NEWBERRY COLLEGE.

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city of Clinton and is rapidly increasing in value. Its new administration building cost $35,000, and is a gem of architectural beauty, and is a credit not to the town only, but to the State of South Carolina.

FEMALE COLLEGES

Within the last two decades wonderful progress has been made by the State of South Carolina in the matter of educating her daughters. Prior to this time many institutions, richly endowed and with teachers of the highest talents and acquirements, offered great advantages for the education of the males, but comparatively little interest was manifested by the State in female education.

There were female colleges before the war at Charleston, Greenville, Sumter, Yorkville, Laurens, Limestone, Orangeburg, Columbia, Blythewood and Bradford Springs. All but three of these, Greenville, Limestone and Due West, have been closed for various reasons. Many other denominational and non-sectarian schools now exist in the State, almost twice as many as for males, and the State makes large appropriations for the Winthrop Normal and Industrial College, showing that female education is now receiving the attention it justly deserves.

BARHAMVILLE FEMALE COLLEGE.

Barhamville has the high honor and distinction of being the oldest female college in the State.

Dr. Elias Marks, who attended the schools of Charleston, graduated from the New York Medical College in 1815, and after conducting a drug business in New York for two years, returned to the South and opened a school for young ladies in Columbia, in 1817. This College was first located where the Washington Graded School now stands, but was subsequently removed about one and a half miles northeast of the city of Columbia to the "Sandhills."

Dr. Marks was a cultured man, a polite scholar and an enthusiast on the subject of female education. His wife was a woman of great literary attainments and was ever a help and inspiration to him in his grand and noble work. The school was named in memory of his son, Barham, who died in childhood.

From the beginning of this school in 1817 to its close in 1861 it was a success, and emerged gradually from the "day school" to a college of large proportions, enrolling each year 200 students from the best families in the whole Southland.

The standard of the school was high, and its tone was elegant, refined and dignified. The best teachers from the North were employed, usually eight or ten constituting the faculty. The annual outlay for teachers was from $12,000 to $14,000 annually. The following corps of teachers were engaged from 1858-61: Elias Marks, M. D., Principal, department of history and belles-lettres; Mrs. Marks, writing; M. Dorvilliers, French, drawing, modern languages; Rev. Mr. Donnelly, Prof. Reynolds, Mr. Alexander, Mr. Ward, chaplains at different times; Mr. Orchard, music master; Madame Sosnowski, painting and drawing; Madame Feugas and M. Strawinski, dancing; M. Manget, French.

The school had a well-selected library, philosophical apparatus, and a cabinet of minerals. The laboratory where chemistry and philosophy were taught is still standing, repaired and refitted for a dwelling. The other buildings were destroyed by fire in 1869.

Some of the graduates of this school, who afterwards became prominent ladies of the land, were Miss Bullock, of Georgia, the mother of President Roosevelt, and Parmela Cunningham, who was instrumental in the purchase of Mount Vernon. It is the *alma mater* of many well-known women whose influence is now felt in the educational, social and religious world.

"Barhamville! What hallowed associations the name recalls! Work earnest and true, fun and frolic, the noble, the beautiful, the generous. Some graduates have filled the highest walks of life; some have lived in humbler spheres; but the principles taught and enforced will ever exalt the name Barhamville."

LIMESTONE FEMALE COLLEGE.

Limestone College was conducted with splendid success by Dr. Thomas Curtis and his son, Dr. William Curtis, from the date of its foundation in 1845 until it was closed, when the storm-cloud of disaster burst over South Carolina during the War between the States. After the war its was conducted for a short time by Dr. William Curtis. Under the Messrs. Curtis the name of Limestone was a household word throughout the South. The best families of the Southern

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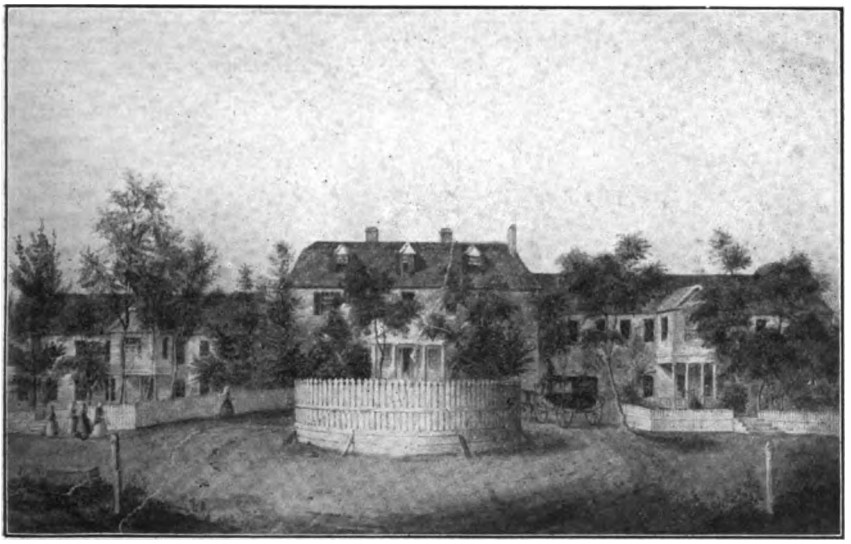
States sent their daughters to this College. The physical, intellectual and moral training here was of the highest excellence.

Today many graduates of this College may be found all through the South, shining like bright jewels in the communities in which they live. Peter Cooper purchased the property to establish a technical school for women. He afterwards made a donation of the property to the Spartanburg Baptist Association for school purposes. After some years of disaster, in 1881 the College was revived under that famous teacher, Capt. Harrison Petillo Griffith.

In 1899 Prof. Lee Davis Lodge, Ph. D., for fifteen years a professor in the Columbian University at Washington, D. C., became president, and now the institution is enjoying a high degree of prosperity. The thorough instruction, the refined home influence, the healthful climate, and the mineral water contribute to its popularity.

The curriculum embraces all departments found in the best female colleges North or South. The equipment is strictly modern and the buildings are ample and admirably adapted to the purposes for which they are used. Some of the apparatus has been imported from Europe.

This College has two distinctive departments not found in other female schools: The Society of Philosophical Inquiry, affiliated with the Society of



SOUTH CAROLINA FEMALE COLLEGIATE INSTITUTE, BARHAMVILLE, S. C.
(Lithograph of Saxony & Major, 117 Fulton St., New York.)

Philosophical Inquiry at Washington, D. C., and the "Winnie Davis School of History," the object of which is to promote the study of Southern history and Southern literature.

A beautiful new hall of history, a gem of architecture, has been erected for this department, which is called "The Winnie Davis Hall of History," in memory of the "Daughter of the Confederacy," a name enshrined in every true Southern heart.

GREENVILLE FEMALE COLLEGE.

In 1854 the Baptist State Convention established a female college, and from the beginning determined that the standard of attainment be high. Greenville, long famed as an intellectual center, and remarkable for its health and social and religious advantages, was chosen as the location. Handsome buildings were erected, and under such educators as Rev. A. H. Duncan, C. H. Judson, LL. D., the College entered upon and maintained a highly successful career.

In 1878 Dr. Judson resigned the presidency to accept an equally responsible position in Furman University, and Prof. A. S. Townes was chosen to succeed him. Dr. Townes remained at the head of the College up to 1894, when he was succeeded by Dr. W. M. Riley, who was followed by Col. E. H. Murfee, LL. D., in 1900; but in 1901 Col. Murfee resigned and Dr. E. C. James, the present incumbent, became president.

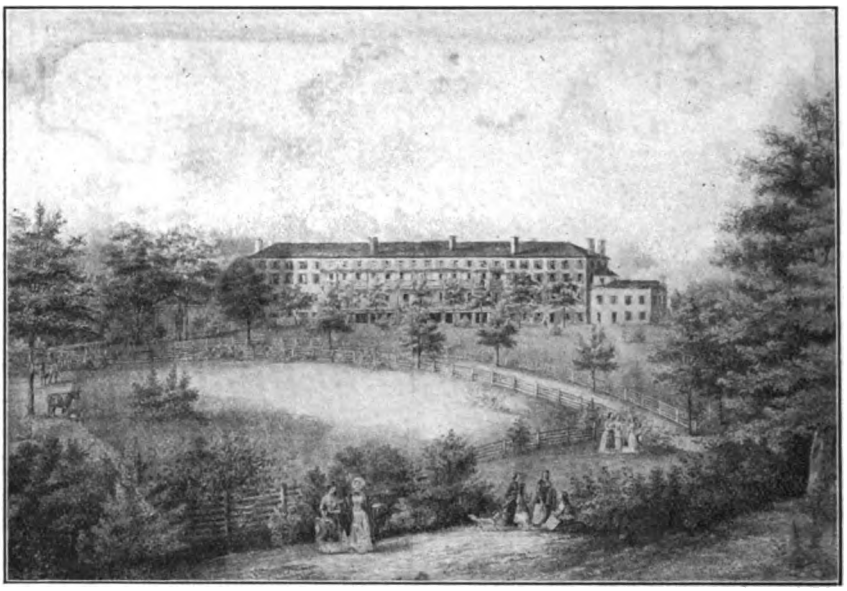
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The standard of scholarship has been steadily improved. The College ranks high. It is the purpose of the management to make it one of the leading colleges for women in the South. It numbers among its graduates and former students many of the most charming women of this State and other States. They are leaders in social circles, in church and missionary work, and in educational work. About one-half of the graduates become teachers.

The College has had an overflowing patronage the past three years. A building has been rented for an annex. The College is accommodating fifty per cent. more boarding pupils than its buildings will hold. Thirty thousand dollars is now being raised for a new building.

COLUMBIA FEMALE COLLEGE.

"Columbia Female College, 1854-1904—Columbia College, 1905." These inscriptions appear on the cornerstone of the new College building, laid April 24, 1905. This College was chartered in 1854 for the higher education of women. The school was opened in 1859, and was continued without interruption until 1864, when it was closed on account of the depressing effects of the War of Secession. From that time to 1873 the buildings were rented as a hotel. Since



LIMESTONE SPRINGS FEMALE HIGH SCHOOL (1845).

(On stone by C. Kuchel.) (P. S. Duval & Co.'s Steam Lithograph Press, Philadelphia.)

1873 it has been in continuous and successful operation. The main building was enlarged in 1867, and in 1895 the plant was thoroughly overhauled, enlarged and fitted with modern heating and sanitary equipments. Its prosperity has not only been material, but in 1895 the entrance requirements and graduation were made to conform to those of the leading colleges for men, and thus a great forward movement was inaugurated. The increase in numbers demanded more ample provision, and in 1904 a new site was chosen and new buildings projected.

In September, 1905, the College began work in its new and enlarged home, north of the beautiful and progressive city of Columbia, on a site elevated sixty feet above the level of the city. Costing more than $150,000 and containing 224 rooms, it is one of the most superb, handsome and convenient colleges for women in the South.

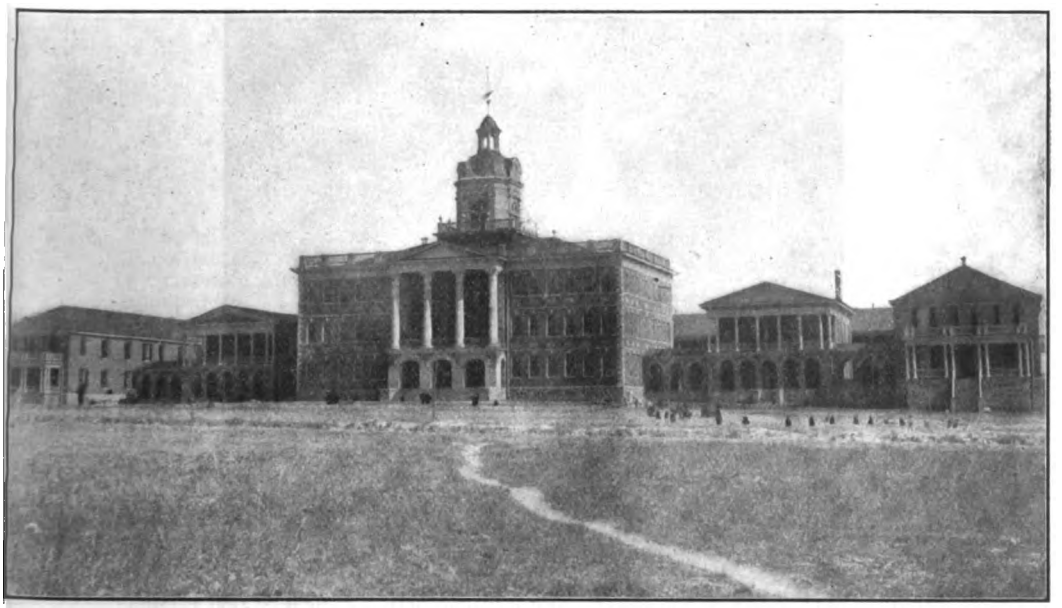
The location is most favorable to study, being near yet away from the noise, dust and distractions of the busy and crowded city. Here the students have all the quiet and freedom of the country and all the advantages and conveniences of the city.

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Most liberal provision has been made for every department, and able, competent, experienced and well-trained teachers are in charge. The plan is to furnish the best service for a reasonable charge. The purpose is always to give value received. Patronage is sought on the ground of merit alone. The great aim of the College is to offer to young women a broad and deep culture, careful and exact training, thorough and liberal education. For the past twelve years the work of the Columbia College has been high grade, and every session witnesses some advancement.

LANDER COLLEGE.

This College, with its splendid property in the city of Greenwood, belongs to the South Carolina Conference of the Methodist Episcopal Church, South. The property is a gift in perpetuity of the citizens of Greenwood. It is worth over $60,000. Such a gift to the Church of Christ is rare, at least in this section of the country. It is named for the late Rev. Sam'l Lander, D. D., who founded it, February 12, 1872, in the town of Williamston, and who successfully conducted the school for thirty-three years, and who arranged for its removal to Greenwood in 1904. It was his life-work, his greatest achievement and is a fit tribute to his memory. The old cornerstone from the Williamston building was



COLUMBIA FEMALE COLLEGE.

relaid by Dr. Lander in the Greenwood building and a new cornerstone was also laid by Dr. Frank E. Harrison, Grand Master of the Ancient Order of Free Masons of South Carolina, in 1903.

Full of years, rich in good works, devoted to the training of Christian women, a rare friend, a true Christian and consecrated minister of the Church of Christ, Dr. Lander departed this life July 14, 1904.

On July 26th the Board elected Rev. John O. Wilson, D. D., to succeed him. This College has always stood for the education of womanly women, in which genuine religion should have chiefest place. Dr. Lander followed unwaveringly the course marked out. Nothing could induce him to pass students who did not merit advancement, nor to graduate any who did not honestly earn a diploma. As a result, the graduates soon came to be looked upon as women ready for any modest, Christian service—efficient, faithful, steadfast, helpful, says Hon. O. B. Martin, State Superintendent of Education.

The course embraces the studies taught in the other colleges for women in the State. There are four departments, all well arranged and fully equipped for excellent work. For thirty years this College offered several unique and peculiar

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features in female education, and under Dr. Lander they were eminently successful. They are summarized briefly as follows: (1) The organization of new classes every session of twenty weeks, instead of once a year. (2) Instead of prizes for excellence, deductions from regular tuition fees were allowed. (3) The "one study plan," so-called, in which the session was subdivided into four sections of five weeks each, and some particular branch was made the major study and some associate branch the minor study. (4) The graduation of the student eight times during the year as soon as she has completed the round of studies. (5) Private graduation with no public exhibition; but the students were subjected to rigid examinations. The Trustees in June, 1907, directed the discontinuance of this system. It remains to be seen whether this action is a wise one or not.

CONFEDERATE HOME COLLEGE.

August 12, 1867, Mrs. M. A. Snowden took the first steps for establishing the Confederate Home and School in Charleston by securing the present premises at the rent of $1,800 a year. There was but one dollar in hand to meet this rent. This was the gift of an inmate of a charitable institution in Baltimore.



ENTRANCE TO COLLEGE FOR WOMEN, COLUMBIA.

A meeting of ladies was called, a constitution adopted and an organization effected. Mrs. Snowden was the first President. The institution was at once opened and twenty-five ladies were furnished with rooms. A school was organized for the children of the inmates, numbering twenty-five pupils. These were gratuitously taught by the young ladies of the city. The first year's report showed that the Home was giving shelter to seventy inmates, and the school numbered fifty pupils. As there was still room in the spacious building for more occupants, it was decided to make the educational feature more prominent. This led to the organization of a female college within the Home, with a Board of Control and a good corps of teachers. Under this plan this institution has worked for thirty-seven years. All the branches leading to a thorough education are taught, including French, German, Latin, Music. The students are provided with a home, education, books and uniform. Daily oversight is given to the management of the school by the President, matron and resident teachers.

The Home has little source of income except voluntary contributions. The State gives it annually $2,000. By far the greater part of the students are wholly or in part beneficiary. However, when there is ability upon the part of the parents or friends to pay, it is strictly required. Two hundred dollars yearly will meet all expenses, yet few have been able to meet this requirement.

The number of students averages sixty. In addition to the students, the Confederate Home has provided rooms for mothers, widows or daughters of Southern soldiers, with every possible help for their maintenance. There has been an average of forty permanent inmates for the past thirty-nine years.

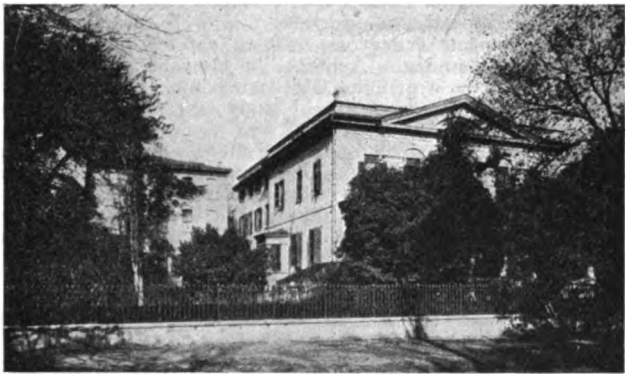
This remarkable work is done without endowment, and depending upon the energy, zeal and devotion of these noble Christian women of Charleston.

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CLIFFORD SEMINARY.

Rev. B. G. Clifford and his wife, Mrs. Mary Schofield Clifford, were in charge of the Unionville Female Academy from 1874-1881. In 1881 they founded the Clifford Seminary in Union and in 1883 it was chartered by the State of South Carolina.

These principals have given all the energy and zeal of their lives to the uplifting, ennobling and refining of young womanhood. The many who have gone out from this school have reflected honor upon their *alma mater* and are enforcing the principle taught them of "simple living and high thinking."



COLLEGE FOR WOMEN, COLUMBIA.

The buildings were put up at a cost of $10,000 by the principals themselves. These buildings are plain and home-like, but the education given is of as high a character as that obtained from more pretentious seats of learning. It is equipped with modern appliances, library and scientific furniture.

Its patronage comes from the best families of the State, and it continues to increase in usefulness and in extending its advantages. It has already wrought a good work for Union County and the State, which is an earnest of the future before it.



GROUNDS—COLLEGE FOR WOMEN, COLUMBIA.

THE COLLEGE FOR WOMEN.

This College was founded by the Presbyterians of this State and was called the "Presbyterian College for Women." It was chartered by the South Carolina Legislature to give collegiate education and confer degrees upon its graduates.

For six years it was under the management of Rev. W. R. Atkinson, D. D. Since this time it has been under a Board of Directors consisting of twelve members, six of whom are residents of Columbia and six from different parts

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of the State. This Board is perpetual and self-perpetuating, and has been incorporated under the name and title of "The Board of Trustees of the College for Women."

From the first year of its existence this College received the patronage of all denominations, and is now non-sectarian and called "The College for Women."

This College is "beautiful for situation," occupying the old William C. Preston estate, also known as the Hampton Place. The gardens of this property have been famed for more than one hundred years. Agassiz, Audubon, LeConte and other naturalists have visited its collection of rare firs and pines. The pleasure grounds cannot be surpassed for loveliness and beauty.

The buildings are Hampton Hall, Preston Hall, Studio, New Dormitory and the Science Building, all large, comfortable and well furnished.

The College management endeavors to give careful attention to the best interest of the individual student. A home-like atmosphere pervades this institution, and its aim is to be a genuine Christian home.

There is a full and high grade course of study; special provision for the care and development of the body.

The students have the advantage of the College library, the library of the South Carolina University, the State Library and also the Timrod Library.

Rev. R. P. Pell succeeded Dr. Atkinson as President of this College, who, after very successful work here, was called to the Presidency of Converse College. He was succeeded by Miss Euphemia McClintock, who is at present the efficient President. She has the honor of being the only lady in the State that holds such a high position in educational affairs.

CONVERSE COLLEGE.

This College was organized in 1889 and called for its founder, D. E. Converse. It is situated in Spartanburg on the site of "St. John's College," including forty-seven acres. Rev. B. F. Wilson, D. D., was elected president. The first session began October, 1890, and 176 students were enrolled the first year. Since then this College has steadily grown, and for the past four years its enrollment has been over 300. Many large and elegant buildings have been erected to satisfy the ever increasing demand to accommodate students and equipment. At first the corporation was a stock company, but in 1896 these stockholders surrendered their claims upon the property and donated it to the cause of the higher education of young women. The Legislature re-chartered the institution, making it an absolute and permanent gift to the cause of education.

President Wilson, after twelve years of successful management, resigned on July 1st, 1902, and the Rev. R. P. Pell, formerly President of the Presbyterian College for Women in Columbia, was elected to succeed him.

The College is vested in a self-perpetuating Board of Trustees by charter. This trust is discharged gratuitously by the Board, none of whom have any property rights in the College, so that all the funds are used for the conduct and further equipment of the College. Its students come from all the Southern States, some from the Middle and Western and Northern States.

Its alumni are so intensely loyal that it has been unnecessary to do any canvassing in order to fill its halls.

The highest entrance requirements in the United States are fifteen units of high school work; Converse requires twelve units. This shows a very high standard. This standard is being steadily advanced as rapidly as can be done without losing touch with the best preparatory schools.

The most striking thing about the College is the broad and far-sighted policy that has marked its administration from the beginning. It is not denominational, and all incomes and revenues are used absolutely for the benefit of the students under its care. The same breadth and foresightedness are equally evident in its purely educational work. Converse stands for an education for woman just as extended and of as fine a quality as that for man, but different in its tone and trend. The College is just entering upon a larger understanding of what its work is to be, and its administrators are determined to make it adjust itself more and more to the actual demands of the situation, both as to the needs of this section and the needs of our women.

This instituion has graduated 385 pupils. Value of the property is $350,000.

CHICORA COLLEGE.

Chicora College was organized in 1893, under the auspices of the three Presbyterian churches of Greenville, by Rev. J. F. McKinnon. In 1898 it was reorganized as a stock company, and S. R. Preston, D. D., was placed at its

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head. In 1906 it became the property of the six Presbyteries which compose the Synod of South Carolina. Thus organized, it is the youngest college in the State.

The institution is a Presbyterian College, established, maintained and conducted for the purpose of promoting Christian education in harmony with the constitution of the Presbyterian Church in the United States.

The supreme aim of Chicora College is to make women; and its conception of womanhood is a graceful and vigorous body, a thoroughly disciplined mind, together with a high moral and spiritual character. Character is more important than mere intellectual knowledge, and a trained conscience more valuable than mere education; hence the endeavor of this College is to form character and to train the conscience, while educating and imparting knowledge.

The site of the College—McBee Terrace, 995 feet above sea level—is in the center of the city of Greenville, and comprises several acres ornamented with majestic oaks, shrubbery and grassy lawns. The place is attractive and beautiful, commanding a fine view of the city, the river and the mountains. The buildings are spacious, modern and well furnished. There is a bright future for this young and deserving College. Rev. S. C. Byrd, D. D., is the energetic president.



MAIN BUILDING—CONVERSE COLLEGE, SPARTANBURG.

DUE WEST FEMALE COLLEGE.

This College, under the auspices of the Associate Reformed Presbyterian Church, was founded in 1860 by a company of citizens of public spirit. Just at the time that it was established came the paralyzing effects of the War of Secession, and little progress was made for several years. Since this trying period passed away its walls have been filled with students from many of the Southern States.

The grounds are large and beautiful with walks and beds of flowers, which invite to open air exercise. The buildings, which are large brick structures, are elegantly furnished, and equipped with all modern improvements.

The course of study is thorough and the standard high.

This College, although launched forth at such an inauspicious time, has successfully overcome the ripples of adversity, and is now on the topmost wave of prosperity and usefulness.

The Presidents who have given such faithful and efficient services to this institution are: Rev. J. I. Bonner, D. D., Prof. J. P. Kennedy, Mrs. L. M. Bonner, Rev. C. E. Todd, Rev. James Boyce.

Due West, with its Erskine College for the education of men, Due West Female College and Theological Seminary, has been beautifully and appropriately styled "The Drumtochty of South Carolina."

THE GREENVILLE COLLEGE FOR WOMEN.

This College was organized in 1894 with a full complement of teachers and officers, and a charter was obtained under the laws of South Carolina, having as its design the education of young women in the full college course under Christian auspices, blending with college education the home influences and freedom possible only when a limited and select number of boarding pupils are

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received. A large and influential Board of Visitors has general oversight of the College and lend their moral and material aid to it.

Since its organization the College has had a prosperous career, and has sent forth about 100 graduates. More than three-fourths of this number have engaged in teaching, and everywhere the diploma of the College for Women was recognized as entitling its holder to the confidence of the people as to culture and worth. About 1,200 matriculates have enrolled. The President is Alexander S. Townes, a graduate of the Universities of Furman, Heidelberg and Leipzig. There are nine teachers in the faculty.

The special claim of this College is that it receives only a limited number of students, and can thereby do individual work. The working principle is every student recites every lesson every day.

The value of buildings, grounds and equipment is $25,000.



A MILL VILLAGE FREE SCHOOL.

MEMMINGER HIGH AND NORMAL SCHOOL.

The Memminger High and Normal School is the Girl's High School and the City Training School for Teachers maintained by the city of Charleston. It was established by Act of the Legislature in 1857 and was one of the first normal schools in the South. The State contributed $35,000 to its equipment and maintenance during the first five years of its existence. With the exception of two years at the close of the War between the States, it has been maintained as a high grade school for girls and a training school for teachers.

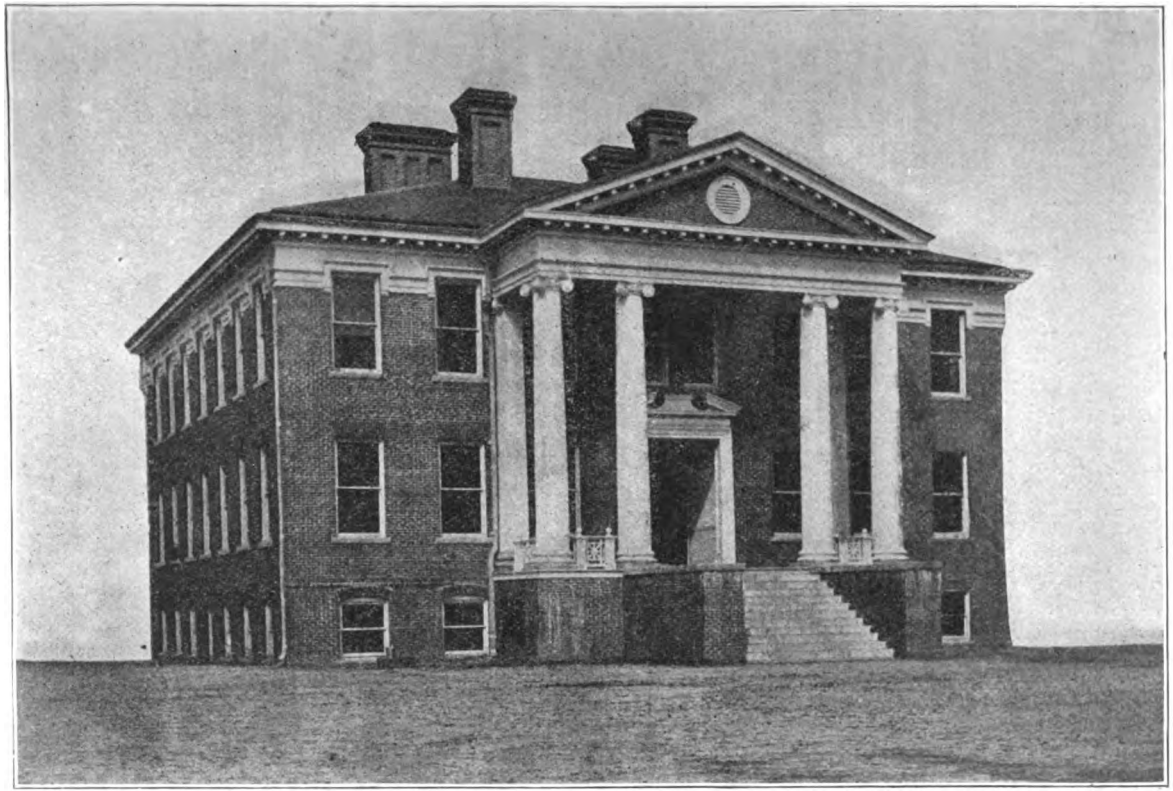
It admits pupils who have completed the seven years of the elementary schools, and graduates them after a six years' course of study. The last three years of its course comprises work usually done in the colleges of South Carolina. Its diploma entitles the holder by law to a teacher's certificate in the State. The school was named in honor of the Hon. C. G. Memminger, a distinguished citizen of South Carolina and one of the founders of the Charleston Public School System.

COEDUCATIONAL COLLEGES.

THE REIDVILLE SCHOOLS.

These schools were founded by Rev. R. H. Reid in 1857, and were named for him. The lands were donated by James and Anthony Wakefield and James N. Gaston for school purposes. The property belongs to the Reidville Presbyterian Church, controlled by a self-perpetuating Board of fifteen members. The Reidville Female College and the Reidville Male High School were conducted

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A SMALL CITY PUBLIC SCHOOL.

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as separate institutions from 1857 until 1905. In the fall of 1905 the schools were united, and are now known as the Reidville Graded School.

One thousand boys and twelve hundred young ladies have received the greater part of their education and preparation for life in these schools. They have been a considerable factor in education in the Piedmont region of this State.

LEESVILLE COLLEGE (CO-EDUCATIONAL).

The Leesville College was chartered by the Legislature in 1890, and is the successor of the Leesville English and Classical Institute, incorporated in 1881. It is situated at Leesville, on the Southern Railroad, midway between Columbia and Augusta, Ga. This section has long been noted for its healthfulness and is an ideal location for a college. This College was established to meet the demands made for higher education in this section.

The College is empowered to confer degrees and grant diplomas. There are five substantial buildings on a lot of eleven acres, all admirably adapted to the purposes for which they were erected.

This College offers higher education to both sexes. There are separate dormitories, each under the direct oversight of the President, and the discipline is such as is best fitted to lead the students to govern themselves. For the young men there is military training and a commercial course, together with the regular academic department. The young women have offered to them excellent art and musical advantages and domestic science with the literary courses. Physical culture receives much attention.

The young women are permitted to do household work and thus reduce their expenses. Many worthy girls are thus enabled to get an education who otherwise could not.

The equipment is increased every year, and all available room is now occupied. Prof. L. B. Haynes has been President for nineteen years. The value of the property is $25,000. The annual enrollment is from 100 to 300. There are fourteen teachers and officers. The College has a good library of select books and good reading rooms.

SOUTH CAROLINA COEDUCATIONAL INSTITUTE.

This College at Edgefield is coeducational, and has been in successful operation for sixteen years, always having as many boarding pupils as can be accommodated, 100 now being the limit. It is controlled by the President and founder, Col. F. N. K. Bailey. It is strictly a military school and makes a specialty of preparing young men and women for the junior classes of the best universities.

The course of study offered is equal to that of the best female colleges in the South. A thorough normal course is given to those students who desire to prepare themselves to teach in the public and high schools of this and other States. A large number of successful teachers have been sent out from the institution within the past few years.

Handsome brick buildings, containing fifty dormitory rooms, large auditorium, class rooms, parlors, offices, society halls, art studio, music rooms, dining room, etc., have been erected on a campus of eight acres in a beautiful oak grove. Steam heat, electric lights, modern water works supply the buildings.

The President and twelve professors live in the buildings with the students, making it a distinctive home school. The school has a library of well selected standard literature.

CATHOLIC ACADEMIES AND SCHOOLS.

CATHOLIC SCHOOLS.

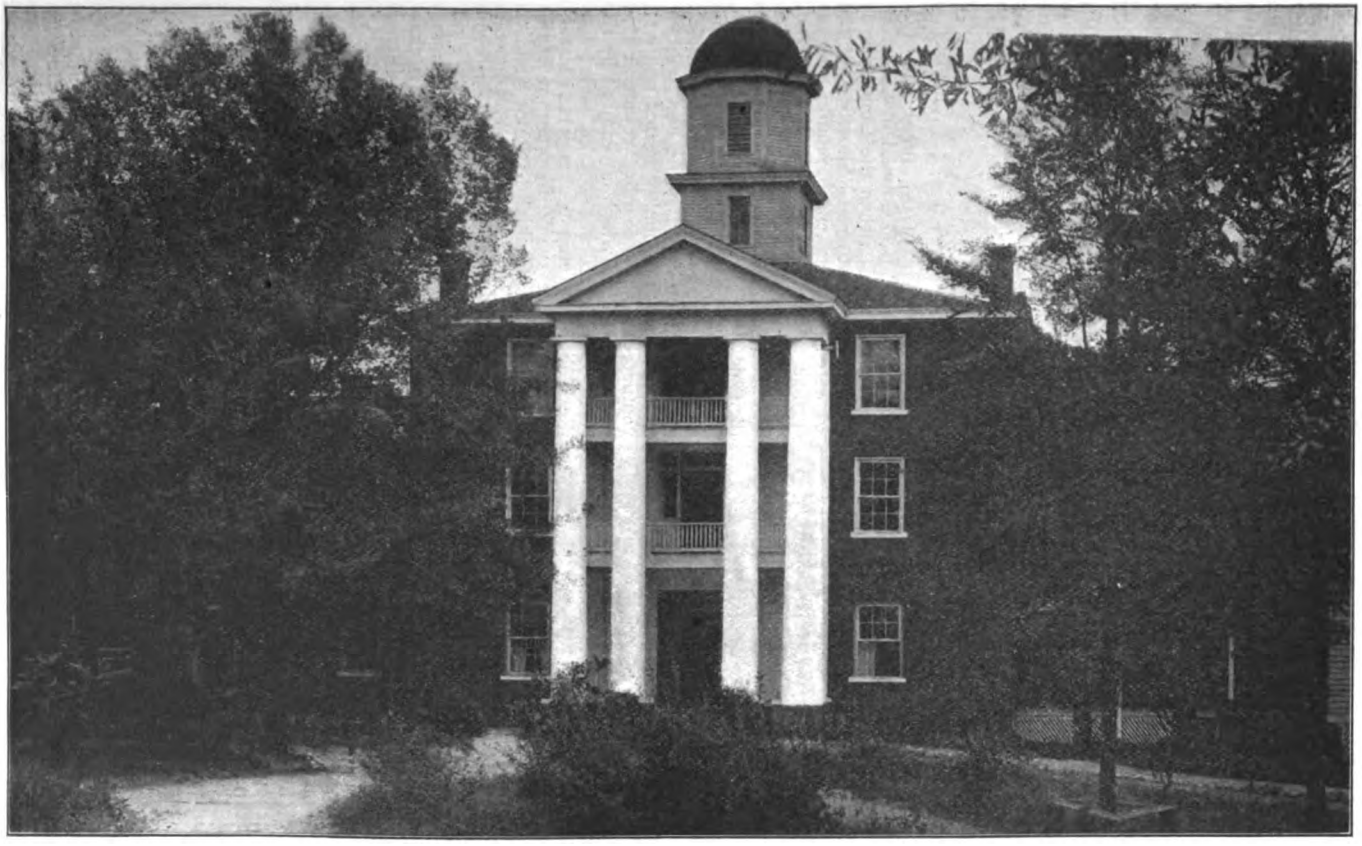
In 1791 the Roman Catholic Church of Charleston was incorporated by an Act of the Legislature of South Carolina under Father Ryan.

In 1793 the Hibernian Society was organized by Dr. Gallagher. In 1823 Bishop England established and conducted a select classical academy for the youth of Charleston and a seminary for the training and education of ecclesiastical students, called St. John the Baptist.

In this seminary were educated such men as Bishop Lynch, Dr. Corcoran and Dr. J. J. O'Connell, who founded the Ursuline Convent in Columbia in 1858.

In 1822 Bishop England established a newspaper, *The Catholic Miscellany*, which continued to 1861.

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MAIN BUILDING—DUE WEST FEMALE COLLEGE.

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In 1829 he established the Academy of Our Lady of Mercy, for the education of children, which has continued till now in its good work. St. Joseph's, of Sumter, was established in 1863.

St. Francis Xavier's Infirmary, under charge of the Sisters of Mercy, was founded in 1882. A training school for nurses was added in a few years, which has proved to be a benediction to the city. In the city of Charleston is the Orphan Asylum of the Catholic Church, where a number of orphans are educated and cared for.

ST. ANGELA'S ACADEMY.

This Academy was opened at Aiken in 1900, and has had a successful career ever since. This is shown by the fact that in six years the faculty, number of students and capacity of the buildings have been doubled.

It occupies a beautiful site in the town of Aiken, justly noted as a health resort. It has about 100 students, ten teachers, and graduated its first class last year—a class of five. The corps of teachers is an excellent one, with Celestine Quale as President.

The institution is under direct control of the Sisters of Mercy. The property is worth at a low estimate $25,000.

URSULINE CONVENT.

All records, from the date of foundation by Rev. J. J. O'Connell in Columbia in 1858 to the burning of Columbia by Sherman in 1865, when the Convent was burned, were destroyed. Shortly after the war steps were taken to rebuild and refurnish the school, and now the Convent stands on the corner of Assembly Street and Hampton Avenue, a monument to their devotion to education by the Catholics of the State. It is a commodious and handsome building, furnished with all modern equipments and the best sanitary arrangements, thoroughly heated and well ventilated. The grounds are ample for outdoor exercise, which is required by the rules of the Academy to take, and which the delightful climate renders pleasant throughout the year. In point of health and beauty, Columbia does not yield to any Southern city; hence the Academy is ideally situated and attracts students from other sections.



URSULINE ACADEMY.

In admission of students no distinction is made on account of creed, nor is any undue influence used over their religious principles. The institution is chartered by the Legislature of South Carolina, and is empowered to confer degrees and diplomas.

The Convent is under control of the Right Rev. Bishop Northrop and the Mother Superior, Mother Angela Broomfield, and a high class of education is furnished.

There are flourishing Catholic schools: in Florence, St. Anthony's Mission School; Sacred Heart School, at Greenville; St. James' (Colored) School, Colleton County.

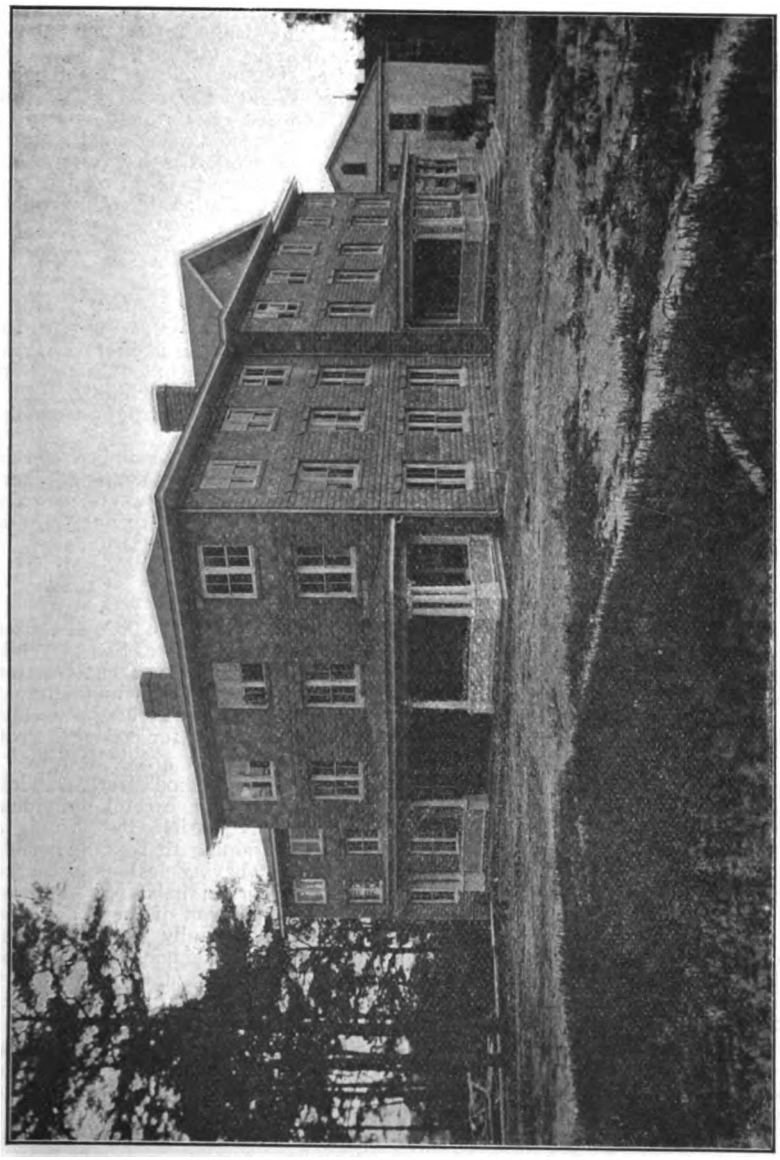
There is a Catholic population in South Carolina of about 9,000, and this supports nine academies for young ladies, with 300 students; nine parochial schools, with 850 pupils; two mission schools; one orphanage, with 125 orphans; one hospital, and five divinity students—1,278 in all, without any State aid.

SACRED HEART ACADEMY.

This school for boarding and day pupils, under the direction of the Ursuline Nuns, is beautifully situated on Hampton Avenue, Greenville, South Carolina.

It offers every facility for thorough education through the kindergarten, primary, preparatory and academic courses. The class rooms, chapel, dormitories, refectory, library and gymnasium are supplied with every modern equipment and convenience, making it a delightful home school. Madam M. Patricia is the directress in charge.

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CARNEGIE HALL—DUE WEST FEMALE COLLEGE.

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CATHOLIC MISSION SCHOOL.

This school was established at Florence, October 15, 1899, and is purely a charitable institution for the benefit of isolated white children of the country districts, and is supported by the Guild of Saint Anthony, a Catholic religious society. Purchased seven years ago for a few hundred dollars, its value is more than twenty-five thousand today. It is one of the most attractive spots in a city whose buildings are becoming handsomer and more costly year by year. The school differs from any other in the State; for while furnishing a good practical education, including music, art, needle work, it trains the girls in housekeeping and domestic science; no servant crosses the threshold of the kitchen, all the cooking is done by the inmates in Father Wood's Refectory. Thus the children are reared to be useful, independent, and self-respecting members of society. This feature alone commends the school, in these days when the acuteness of the *servant question* is so keenly felt. The work has had blows and backsets; but sheer pluck, hard work, and determination have succeeded and the mission is growing daily in power and in scope. Father C. D. Wood is the head.

PRIVATE HIGH SCHOOLS.

THE CHARLESTON HIGH SCHOOL

Was established in 1839 and has rendered valuable service in preparing boys for college and university. In its course of study and curriculum it offers as great advantages as Philips Exeter or any similar school of the United States. Its standard of scholarship is high and it has a strong corps of teachers.

It is supported partly by tuition fees and partly from appropriations from the city council, which reduces the tuition fees one-half.

The buildings are commodious and its gymnasium is well equipped and in charge of competent teachers, who give instruction in athletic sports and exercises. This school has had among its principals such prominent and efficient educators as Profs. H. P. Archer and Virgil C. Dibble. The principal now is W. M. Whitehead, recently Grand Master of Masons in South Carolina.

THE PRESBYTERIAL HIGH SCHOOL.

Was founded by Pee Dee Presbytery in 1903. It is located on a well-chosen site of five acres, donated by public-spirited citizens of Florence, S. C. While in conception and management it is a Presbyterial High School, it has received gratifying patronage and contributions from people of other denominations.

It was founded in response to a need long felt by many of the best educators of the State, the need of more thorough preparation of pupils for college. Prof. George Briggs is the Principal.

The founders of the school wished to see embodied in school work the following ideas: (1) By limiting the number of pupils to give careful individual attention. (2) By concentrating in as few branches as possible, by learning a few things well, to give the pupils the right mental training that would enable them to take up college work successfully. (3) By having lessons prepared under the direction of teachers to teach the pupils correct habits of study as well as the branches they pursue. (4) By careful application of the honor system to train pupils to master self and to withstand successfully the temptations of college life. (5) By making the Bible a textbook in the school to enable the pupils to become familiar with that greatest of all Books, not only as history or literature, but also as the greatest means of strong Christian character building.

It is the purpose of the high school to take boys and girls who have completed the eighth and ninth grades in the graded schools, or an equivalent of work, and by a two or three-year course of study to give them thorough and advanced preparation for college.

PORTER MILITARY ACADEMY, CHARLESTON.

The Porter Military Academy was founded in December, 1867, by the late Rev. A. T. Porter, D. D., who gave his life to this work. At first it was largely an institution whose objects were beneficiary, scholars being taken from families made necessitous by the Civil War. In this way many boys were educated, and it is not too much to say that the school contributed largely to the saving of the old civilization of the State, which was jeopardized by the poverty and lack of educational facilities of those who had before the war been in culture and afflu-

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PORTER MILITARY ACADEMY, CHARLESTON.

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ence. Dr. Porter, by his own efforts and commanding personality, procured means for the maintenance of the school.

After, Dr. Porter's death, and as the South grew more prosperous and the necessity for this feature of the work lessened, this beneficiary feature was less dwelt upon, but still the income from the endowment fund is set aside to help in the education of boys who could not otherwise get such an education as this school offers.

Since the school was founded there have been more than 5,000 matriculates, and 2,000 graduates, many of whom have distinguished themselves in many avocations in this and other States.

The aim of the school is to prepare for the colleges of the country and for business life. It is under military discipline and religious influence, and the moral, mental and physical training go hand in hand.

Four courses of instruction are offered: A Classical Course, requiring the study of Latin and Greek in addition to the English of the curriculum; a Latin Scientific Course, requiring the study of Latin and French or Latin and German in addition to the English of the curriculum; a Scientific Course, requiring the study of French and German in addition to the English studies; an English Course, requiring the study of the English studies of the curriculum only. In this course only a certificate is given, and not the full diploma of the school as in the other courses.

The Academy occupies a campus of about nine acres in the west central part of the city of Charleston, S. C., on Ashley Avenue, one of the thoroughfares of the city, and near the banks of the Ashley River. There is a school building equipped with laboratory, drawing hall and class rooms; a brick dormitory building accommodating about 150 boys; library, gymnasium, chapel, infirmary and residences of officers and teachers. There is an athletic field and drill ground.

WELSH NECK HIGH SCHOOL.

The Welsh Neck High School was established by the Welsh Neck Baptist Association in 1894. The growth of the school has been continuous and additions and improvements have been made to the plant each year.

The object of its founders was to furnish instruction beyond what can be obtained in the public schools of the State, to prepare students for college, and above all, to furnish this instruction in an atmosphere that shall be distinctly Christian. Realizing that the great majority of students never attend college, the course at Welsh Neck is made to include work usually done in the freshman year at college.

The course in music is especially comprehensive and thorough, graduates in this branch enter easily upon advanced work in the best colleges.

Courses are offered also in business, elocution and art.

The cadets are under military discipline. In no other way can the faculty of attention be so well trained and the students taught promptness and a proper regard for personal appearance.

Welsh Neck also holds a leading position among Southern schools in athletics, her football and baseball teams being uniformly successful.

The great aim of the school is the physical, moral, and intellectual development of all the students that enter her gates.

ORPHANAGES.

THE CHARLESTON ORPHAN HOUSE.

On the 18th of October, 1790, this home and school in Charleston for orphan children began its existence "for the purpose of supporting and educating poor orphan children, and of those poor, distressed and disabled parents who are unable to support and educate them."

The early history of this asylum was marked by an event memorable and significant. George Washington, President of the United States, then upon his Southern tour, visited this institution, expressed his pleasure at its existence, and invoked God's blessing upon its inmates. At this time more than one hundred orphans were gathered in this home.

In 1794 the buildings were completed, and amid public rejoicings one hundred and fifty orphan children were given a home. The chapel was erected in 1801; the cornerstone was laid by His Excellency, John Drayton, Governor of the State and Grand Master of Masons in South Carolina.

The resources of this institution consist of funds received from bequests, donations and other sources, carefully invested and wisely administered by a

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Board of Trustees, yielding an annual income of $13,995.54. The cost of maintaining an orphan has been brought to the lowest practical point, being last year only $91.75 per pupil. This has been accomplished by the girls doing the house work and the boys the outdoor work.

Many of the inmates of this orphan home are now filling places of trust and honor in every avocation in life. All of them look back with pride and affection to their cherishing mother; all rise up and call her blessed.

The endowment is $343,699.82; annual expenses, $23,089.32; teaching force, 12; number of inmates, 215; books, from 4,000 to 5,000; value of plant, $350,000.

The celebrated statue of William Pitt, "the Great Commoner," now on Washington Square, long graced the orphan home grounds—from 1808 to 1881.

THE THORNWELL ORPHANAGE.

The Thornwell Orphanage at Clinton, founded in 1872, but opened on October the first, 1875, was projected by Rev. W. P. Jacobs, D. D., pastor of the Presbyterian Church of Clinton, and his church officers, who served until 1893 as its official Board. Since that time it has been under the control of the Synods of the Southern Presbyterian Church, those of South Carolina, Georgia and Florida being in majority control. White children and orphans between the ages of six and thirteen are admitted from all parts of the country, without respect to denomination or locality.

In this institution the orphans pay no board, nor provide themselves even with their clothing; but they are required to give four hours daily to such work as is necessary to relieve the home of the engagement of servants.

The course of study requires thirteen years, and those who complete the full course secure the degree of Licentiate of Instruction, and have invariably on examination succeeded in obtaining first grade certificates, and teach in this and adjoining States.

The industrial training of the boys provides for work in the machine and carpentry departments, including also plumbing, painting, shoemaking, farming and carpentering. The industrial training of the girls includes steam laundry work, cooking, dressmaking and tailoring, and all the various branches of the housekeeper's art. They are also taught shorthand, typewriting and bookkeeping.

There are fourteen cottages in which the pupils live, each under the direction of a matron, who looks after the comfort and guidance of the pupils. There are three buildings for the Primary, Intermediate and Collegiate classes, respectively, all equipped with modern appliances. There is a large three-story technical building with $6,000 worth of machinery installed, and from this the water supply and the electric lighting are provided. The Industrial School for girls occupies three buildings, in which the laundry, sewing, cooking and dairy work are done. The Infirmary cares for the sick. There is a Library building, which contains 8,000 volumes and the number is constantly increasing. There is also a Museum building. All these buildings are of brick or stone. On the farm of 125 acres all the dairy and garden supplies are provided.

Since the opening of the institution, with only one dollar in the treasury and with eight pupils, about 900 have passed through the institution. Of these, 118 have completed the full course of study. There is now accommodation for 250 pupils, and that number is constantly cared for. There are many more applications than vacancies.

The total cost per month for maintenance is $25,000. This includes salaries of teachers, officers, matrons and foremen, of whom there are thirty-four, and the board, clothing, medical care, books and personal expenses of the pupils, which is about $100 per pupil. This sum is kept at this low figure only because the pupils make their own clothing, shoes, vegetables, milk, butter and many other supplies.

The buildings are substantial, and are valued at $150,000. The Board of Trustees is seeking to raise a sufficient endowment to meet all salaries, but it is not desirable that the support of the individual child should be so provided for, as, were that the case, the bond of interest and affection between the institution and its best friends would be broken. An endowment of $250,000 will be sufficient; of this sum, about $100,000 is in hand.

The support of the individual pupils comes almost entirely from Presbyterian people, although a full half of the children are from other denominations.

Results: Many former pupils are successfully engaged in the different walks of life; sixteen have entered the ministry; a number are practicing medicine, one having recently graduated at the head of a class of thirty-eight; some are lawyers, among these a young lady practicing in Tennessee; some are successful

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farmers, merchants, mechanics, running plants of their own; a large number are teaching, some of them in colleges and theological seminaries; some are in the United States employ at Washington, D. C., in the Navy, in the Army and the Civil Service; some in South America, Mexico, Korea, China, Japan, Africa, the Philippines, engaged in missionary, mining and official life.

CONNIE MAXWELL ORPHANAGE.

The Baptist State Convention at Union, in December, 1890, decided to establish an orphanage. A committee was appointed with power to act, and in April, 1891, decided upon Greenwood as a suitable location.

The invitation from Greenwood involved a consideration of $2,000 from the citizens of the town towards erecting the first building, ten acres of land from Dr. and Mrs. Maxwell, and mortuary title to 483 acres near Greenwood, and also the town property of Dr. and Mrs. Maxwell, on condition that the Orphanage should be located at or near Greenwood and bear the name of their only little daughter, deceased.

The first building was begun in the fall of 1891 and was opened for the reception of children in May, 1892. Since then year after year houses have been built until at present seventeen permanent buildings adorn the grounds. The most pretentious building is the school house, known as the Maxwell Building, and erected out of funds from the Maxwell estate. A beautiful home for girls was erected in 1896 by Mr. W. L. Durst, of Greenwood. Two houses were erected by Mr. J. Terrell Smith, of Williston, the home for boys bearing his own name, and that for girls the name of his devoted wife.

The mechanical building was erected with funds realized from the estate of Mr. Andrew M. Woods, of Sumter County. A commodious office building was paid for by Mr. J. K. Durst, a banker and mill president of Greenwood, and also for a great many years a member of the Orphanage Board of Trustees. The library building was paid for by Mrs. Sallie F. McKissick, of the town of Greenwood, and bears the name of her devoted son, Mr. Edward Perry McKissick. The other houses at the Orphanage have been built from year to year with money contributed by the Baptist denomination in the State of South Carolina.

Connie Maxwell Orphanage is not a home-finding institution, and does not send children out for adoption by persons who wish to have them in their homes. This kind of work is left entirely to other societies or institutions. It is essentially an educational institution. It puts boys and girls through the tenth grade in school, and is now making an effort to provide something in the way of industrial training. Effort is made to provide for the children a genuine home. The boys and girls live in cottages and a limited number is committed to each house. Consecrated matrons and teachers are responsible for their care and training. The essential thing at Connie Maxwell Orphanage is Christian education. The most important features of the work are found at the school and at the chapel, where the head and heart are taught.

EPWORTH ORPHANAGE, COLUMBIA.

This Orphanage was established after urgent appeals through the press by Rev. T. C. O'Dell and Dr. S. A. Weber, of the South Carolina Conference. by the Methodist Episcopal Church, South, at its annual meeting in November, 1894, at Laurens.

An offer made by the city of Columbia of 115 acres, on which was a large brick building of fourteen rooms, was accepted by the Conference in 1895. Two very active promoters in this city were F. H. Hyatt and Edward Ehrlich.

On January 20, 1896, the first children were received into this Orphanage. The total number received up to this date is 330. Today there are 160 in the institution, and others will be admitted soon. It has had a sure and steady growth from the beginning and a prosperous career. It has a church, a school of ten grades, and several domestic and industrial departments for the training of the children. There are nineteen substantial buildings upon the Orphanage campus; nine of these are memorial buildings, representing large amounts given by certain individuals in loving memory of dear ones gone, and with the desire that they be blessings to those bereft of loving parents and protectors.

About twelve years ago, with a $5,000 estate, this baby institution of the South Carolina Conference had its beginning. The Church has fostered and nourished it until it has ceased to be an infant. It has put off swaddling clothes and donned the dress of a young mother, now owning property worth at a low estimate $150,000 in buildings and real estate, a farm of 125 acres, $15,000 endow-

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ment, which will be in a few years $100,000. She has 160 bright and happy children playing upon her lawns, feeding at her tables, clothed by her loving hands, warming at her fires, sheltered in her comfortable homes, learning in her churches and schools, and preparing to lead lives of humble and grateful obedience. To the Superintendents, Rev. G. H. Waddell from 1896 to 1901, and Rev. W. B. Wharton from 1901 to 1907, most of this good work accomplished is due.

THE DE LA HOWE GIFT.

Dr. John De La Howe, of Abbeville District, on the 7th day of September, 1796, made his last will and testament and thereby gave all of his estate, consisting of both personal and real, to the Agricultural Society of South Carolina, in trust, for the purpose of establishing on the plantation where he resided an agricultural farm and school, out of the yearly income, to feed, clothe and educate twelve poor boys and twelve poor girls, giving orphan children the preference. The testator requested Peter Gibert, Esq., to act as executor of the will until the Agricultural Society should name some of its members to perform that duty. By a codicil, without date, he appointed William Hutton a joint executor with Mr. Gibert. Dr. De La Howe died on the 2d day of January, 1797, and his will was admitted to probate on the 27th of March, 1797, by the County Court of Abbeville. An appraisement was made on the 5th of April, 1797. The appraised value of the personal property at that time amounted to $5,438.68.

In 1805 the Agricultural Society surrendered their trust to the Legislature, who accepted it, and by Act passed on the 14th of December, same year, appointed Col. Joseph Calhoun, Peter Gibert, Andrew Norris, Rev. Moses Waddel, Ezekiel Calhoun, trustees, to carry into effect the terms of the will, conferring on them the power to fill their own vacancies, and directed them to account annually to the Ordinary of Abbeville District.

On the 30th of December, 1806, the trustees sold the residue of the personal property. This sale amounted to $6,556.14. On the 27th of June they returned a statement of the personal estate, at that time amounting to $10,639.69.

The real estate consisted of quite a number of tracts of land situated in the Districts of Abbeville, Edgefield, and on the Edisto River. A certain part of the land was sold about this time, which produced a sum—added to the amount realized from sale of personal property—aggregating some $32,237.

The institution has had a changing experience since the above date. Today the institution is in possession of 2,700 acres of land, valued at $54,000, besides having $14,000 invested in good bonds. There is erected on the premises one brick building containing twelve rooms for the use of Superintendent and girls, and one four-room brick building for the boys, a commodious chapel in which preaching is held regularly—preacher paid by the trustees. The annual income of the farm is $3,500; expenses for maintaining school, Superintendent, etc., are $2,000.

In view of the above facts, it is strange to state that the trustees find great difficulty in procuring as many children as the school can accommodate. Notwithstanding the fact, the trustees are now begging for children from adjoining counties, offering to pay their transportation from and to the institution, educate, feed, clothe and pay their medical expenses. I must admit I am unable to explain this state of circumstances.

Dr. De La Howe was buried on the hill opposite to the dwelling on the plantation named by him "Lethe Farm." He requested a substantial brick wall should be built around his grave—not less than ten feet square, eight feet above the ground, with an iron door and lock, and that the following inscription, in large iron capitals, shall ever be kept encased: "Joes De La Howe, fundator, hipes Seminarie Agriculturalis," with date of his decease.

There are other orphan schools in the State. The I. O. O. F. organization has begun a school of this kind at Greenville, and the work done is highly creditable and successful. It is supported by funds raised by assessing each member of the organization $1.00, which amounts to a temporary endowment. It has a fine property, well equipped buildings, and all modern improvements for such work; established in 1904, chartered in 1905. The Associated Reformed Presbyterians are also engaged in this laudable endeavor, and have had an orphanage at Hickory Grove, York County, and much good has been accomplished. There is also an orphanage in Charleston, under the protection of the Grand Lodge of Masons of the State; and possibly others elsewhere in the State.

Rev. Richard Carroll, near Columbia, conducts an orphan school and home for the parentless children of the colored race. His work is highly endorsed by the best citizens of Columbia and the State.

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All these schools are engaged in the double work of providing homes for destitute children, as well as giving to them the rudiments of education—preparing them to become useful men and women. Their work in an especial way appeals to the sympathy of Christian people everywhere.

THEOLOGICAL SEMINARIES.

COLUMBIA THEOLOGICAL SEMINARY.

In Lexington, Ga., in 1828, a theological school was established by the Presbytery of Hopewell, under the charge of Rev. Thomas Goulding, D. D. This was the result of an effort to establish a Theological Seminary and College by the Presbytery of South Carolina in 1824. In 1830 it was removed to Columbia, ample grounds having been purchased for the purpose. Dr. Goulding was assisted by Rev. George Howe, D. D. The Synod of South Carolina and Georgia assumed general supervision. The buildings now occupied by the Seminary were erected, other professors were added, and the institution prospered. The endowment constantly increased. At the beginning of the Civil War there were five professorships, with an endowment of $250,000, $50,000 of which was for contingent fund and scholarships. In 1859-60 Judge John Perkins, of Columbus, Miss., founded the "Perkins Professorship of Natural Science in Connection with Revelation," with an endowment of $40,000, to which Rev. James Woodrow, D. D., LL. D., was elected, and remained in charge to 1886, a period of twenty-six years. Owing to temporary financial embarrassments from loss of investments in 1880, the Seminary was compelled to close. By 1882 additional sums were added to the endowment fund and large amounts again became available, and the Seminary reopened with five professors and an endowment of $150,000, which has been gradually increased.

In connection with the Seminary is a library of more than 20,000 volumes, many of them books of rare value.

The whole number of alumni is 734. Of these, about forty are foreign missionaries. The Seminary is open to students of every denomination, though it is controlled by the Southern Presbyterian Church. The buildings occupy a block of four acres in the heart of the city. The campus is shaded with trees of native growth. Dr. W. M. McPheeters is chairman of the faculty at this time.

ERSKINE THEOLOGICAL SEMINARY.

This School of the Prophets was begun in 1834 at Due West Corner, Abbeville District, by the Associate Reformed Presbyterian Church. At first it was called the Clark and Erskine Seminary, in honor of two of the noted divines of this denomination. It was established as a ministerial school; $7,035 were raised, a sum sufficient to start the enterprise, though it would be small now for such a purpose. A suitable building was erected and the school opened with twenty students. Rev. John Hemphill, grandfather of the editor of the *News and Courier*, and Rev. John S. Pressly were placed at the head of the institution. The name Pressly has been officially connected with Erskine for seventy-three years, handed down from father to son through all these years, for four generations of teachers. The school was the work of the Church, and was actively supported by it.

With this Seminary, Erskine College has been connected from its origin, though in no sense a part of it. The funds are distinct from the funds of the College. The only connection is that the two schools belong to the same body of people, and occupy some of the same buildings. The financial support comes largely from annual collections from the churches comprising the Synod. However, there are some permanent investment funds, amounting to $20,000 or more. The Seminary has three professors. The President of the faculty now is Rev. F. Y. Pressly, D. D., but recently President of Erskine College. The course of instruction covers a period of two years, of nine months each.

Immediately connected with the Seminary is a Board of Foreign Missions, organized in 1875, all members residing at Due West. This Board has charge of the foreign missionary work of the Church, which is very aggressive in sending missionaries to different foreign fields.

The work of this Seminary has always been of the most thorough nature, and the ministers sent out have ever taken stand with the foremost of the land. The names Grier, Hood, Pressly, Barron, McCain, Hemphill, Boyce and Moffatt are synonyms of profound learning and broad scholarship.

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THE LUTHERAN THEOLOGICAL SEMINARY.

The Lutheran Church in the South Atlantic States is not a strong body, but since 1830 it has had a Theological Seminary in which men were prepared for the ministry. In 1898 the United Synod of the Evangelical Lutheran Church in the South, the general body embracing most of the Lutherans in the South Atlantic States, re-established its Theological Seminary. Property was secured in Mt. Pleasant, Charleston County, and an endowment fund was raised, the income of which, together with annual contributions from the churches interested, is adequate for the present needs of the school. The institution draws its students from the States of Virginia, North Carolina, South Carolina, Georgia, Florida and Tennessee. Its design is by a three years' course of study to train men in the knowledge of Christian theology from the Lutheran point of view and of the practical work of the ministry. Its standard of admission is graduation from a reputable college. The scope of its work is limited by its special design. It aims to teach nothing but theology and those arts which are necessary for efficient service in the Christian ministry.

NEGRO COLLEGES.

STATE COLORED COLLEGE.

At the session of the Legislature of South Carolina (1896), the Colored Normal, Industrial, Agricultural and Mechanical College was established for the education of the negro youth of this State.

From 1869 to 1896 the College of Agriculture and Mechanics' Institute, for colored students, had been conducted in connection with Claflin College, but supported by the State.

It was decided to locate this institution at Orangeburg, because: (1) The State owned a tract of land unsurpassed in strength of productiveness and fertility, especially adapted to mixed husbandry and rotation of crops. (2) There was already here an industrial plant which could not be duplicated elsewhere at the same cost, well established and thoroughly equipped for instruction in all the mechanical and industrial arts. (3) There was also a herd of registered dairy cattle, the equal of any in the State. (4) Orangeburg is a healthful locality, situated in the geographical center of the Black Belt of South Carolina, and a railroad center.

Bradham Hall, an imposing structure, three and one-half stories high, 62x126 feet, containing dormitories and class rooms, in convenience of arrangement, symmetry, beauty and comfort, is the equal of any building, for like purposes, in the South.

The new dining hall, 36x75 feet, is the handsomest dining room owned by any college in the State.

There is also a new college building, Morrill Hall, recently completed, 90 feet by 154 feet, containing chapel, library, reading room, laboratory, two literary auditories, gymnasium, commercial departments, class rooms and fifty sleeping rooms, heated by steam, with water works on each floor. The College campus consists of about eight acres, the main and industrial buildings occupying a beautiful, elevated site.

A farm of 130 acres is adjacent to the campus, upon which have been erected dairy, barn and stables.

The Industrial Hall, just erected, is a large two-story building, made of brick, every one of which was laid by student labor. It is to be devoted entirely to the industrial arts, and is the equal of any building of a like nature anywhere. Its dimensions are 120x90 feet, and it contains the following departments: Woodworking, Ironworking, Mechanical and Architectural Drawing, Spinning Room, Tailor Shop, Shoe Making, Harness Making, Painting, and Masonry. In addition, there are in operation College Normal, Normal and Preparatory, Model School, Musical, Art, Industrial, Mechanical, Trained Nursing, Agricultural, Engineering, and Military Departments.

The Normal Course gives the graduate the Degree of Licentiate of Instruction upon its completion, and also the privilege of teaching in the public schools of the State without examination.

It is the best industrial plant for negro education south of Hampton Institute.

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The State intends to bring the best education easily within the reach of colored people of limited means. The school stands for the best education of the hand, head and heart of the negro race.

The strength of any institution is dependent upon the ability and merit of its faculty. The Board of Trustees, while securing for the colored boys and girls of the State one of the best arranged college plants in the South, has also exercised the greatest care in the selection of the faculty, and is confident that the services of a strong corps of teachers has been secured.

The College has been in existence ten school years. More than 7,800 students have been enrolled and 298 have been graduated. The students who have attended, and especially those who have been graduated, are located in several States of the Union.

Reports of the efficiency of the students as teachers and mechanics are continually received from members of both races.

THE AVERY NORMAL COLLEGE.

This school for negro students was organized in Charleston in 1865. A building was erected at a cost of $25,000, in 1868, by the American Missionary Association, and named for Rev. Dr. Avery, of Pittsburg, who gave $150,000 to the Society for educational purposes.

The city school authorities have given their endorsement to the Avery Normal, and the State Board of Education has placed the school upon the accredited list of those colleges whose graduates may teach in public schools without examination.

CLAFLIN UNIVERSITY, ORANGEBURG.

To Hon. Lee Claflin and family the existence of Claflin University is largely due. It occupies the site of Orangeburg Female Seminary, a school for women noted in ante-bellum days. This property of six acres with several excellent buildings was purchased in 1869 and set apart to its present purpose, and a charter obtained. Later sixty-seven acres adjoining were purchased. Since then many large and expensive buildings have been added, the farm and campus have been improved, everything kept in the best repair, so that the whole property presents a very attractive appearance. Such men as Andrew Carnegie, John Harney and Everett O. Fisk have made generous gifts to the College. The institution is under the control of the Freedmen's Aid and Education Society of the Methodist Episcopal Church, North.

The Board of Trustees of the John F. Slater Fund in 1883 established a Manual Training Department and has since made generous annual appropriations for the payment of the salaries of the instructors. The Weber Scholarship Fund of $5,000 was established in 1889.

The institution stands for the higher education of negro youth. It has the following departments: Manual Training and Domestic Science; College Preparatory Course; Technical Preparatory Course; Normal Course; Business Course; Collegiate Clinical Course; Scientific Course. It exceeds in size and equipment the famous school at Hampton, Va., also for negroes. Bishop Atticus G. Haygood said that it is the largest university for negroes between the Potomac and the Rio Grande, *and the least expensive.*

BENEDICT COLLEGE

Was founded in 1871, in the city of Columbia, as Benedict Institute, by the American Baptist Home Mission Society, through the benefaction of Mrs. B. A. Benedict, Pawtucket, R. I. In 1894 it was chartered as Benedict College, for the purpose of giving Christian education to the colored people, to prepare them for the ministry, as teachers, and to make them more useful in all the walks of life. It has a beautiful campus of twenty acres, on which are eleven handsome buildings for the different departments of school work, among them a magnificent Carnegie Library Building, the only one for the negroes in the State. These grounds and buildings are, by a conservative estimate, easily worth $230,000. The College has an endowment fund of $125,921.37, to which $10,000 will be added upon the settlement of a will now pending. The annual running expenses for the year ending May, 1907, were $25,400. During the life of this College there have been 464 graduates. There are 10,700 books in the library. The enrollment for 1906-07 was 667—282 men, 385 women. There are twenty-one teachers, eleven white and five colored. This school ranks very high in the estimation of the white people of South Carolina. During the thirty-six

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years of its existence it has had four presidents: Dr. W. F. Goodspeed and Dr. W. T. Colby, from 1871 for the first ten years; Dr. E. E. Beaker, from 1881 to 1904; Dr. A. C. Osborn, from 1894 to 1907.

It is safe to say that at least $750,000 has been spent on the expenses of this College. Its industrial departments are: for the women, sewing, housekeeping and dressmaking; for the men, printing, shoemaking and carpentry.

ALLEN UNIVERSITY.

Allen University embraces four acres of land just out of the corporate limits of Columbia, fronting on Taylor and Harden Streets. It was incorporated by the Legislature December 12, 1880, and was organized in 1881, under the control of the Columbia and South Carolina Annual Conferences of the African Methodist Episcopal Church, and is sustained by contributions from the churches which compose the Conferences. It is in charge of negro educators.

It confers all the degrees common to such institutions, including the Degree of Licentiate of Instruction, which gives the graduate the privilege of teaching in the public schools of the State without examination.

Arnett Hall is a solid brick structure of three stories, with substantial basement. It contains fifty large rooms, used for office, recitation rooms and women's dormitory. There are also six cottages, which are occupied by as many men as could be accommodated upon the campus.

The Coppin Hall is one of the most imposing buildings ever erected and controlled by the negro race. It is built of fine red brick, 110 by 45 feet, and four stories high, with Mansard roof. Four stately Grecian columns adorn the front portico of the building. It contains eight large recitation rooms on the first floor. The second floor is taken up entirely with the chapel. The third and fourth floors are to be used for sleeping apartments, and contain nineteen rooms each. There are forty-seven rooms in the entire building. This house was completed in 1907 and cost $25,000 without the furniture. Rev. Wm. D. Johnson, D. D., Ph. D., has been President since 1904. He is assisted by a faculty of thirteen teachers, all negroes. The departments are: Collegiate, Theology, Law, Normal, Music and Industrial. The course of study has been approved by the State Board of Education for the Degree of Licentiate of Instruction.

It has sent forth 556 graduates in the twenty-six years of its life.

SCHOFIELD NORMAL AND INDUSTRIAL SCHOOL.

In 1865 Martha Schofield (a Quaker) opened a school on Wadmalaw Island, at Rockville, S. C. Later she taught at St. Helena Island and at Charleston. Ill health compelled her to go to Aiken, and in 1868 the present school was opened in an old house. In a short time lands were bought, and the outcome is the present property, worth $65,000, with a valuable farm three miles distant. Besides offering a good high school education, the negroes are trained in all the industrial departments; the men in carpentry, farming, harness-making, blacksmith, wheelwright and shoemaking, the women in sewing, cooking, millinery, housekeeping and laundry work. The equipment, shops, etc., are worth $5,000. Amount received in donations, about $200,000. Endowment fund, about $37,000. This school has sixteen teachers employed in school and shops, and library of 1,500 books.

This institution bears the name of its founder, Schofield, who is President, General Manager, Trustee and Treasurer, and has raised most of the funds by her pen alone.

TAYLOR-LANE HOSPITAL.

This institution was established in Columbia by Martha Schofield in 1901 and was chartered in 1902. Its purpose is to relieve the sick and afflicted of the negro race and to train nurses to care for all classes of people.

Dr. LeGrand Guerry, a leading white physician, is chief surgeon. Dr. F. D. Kendall and Dr. Jas. H. McIntosh have done great service for this institution Dr. Matilda A. Evans is Treasurer and Medical Director of the Hospital.

STERLING INDUSTRIAL COLLEGE (COLORED).

This school was established in 1896 in the city of Greenville for the intellectual, industrial and religious training of the boys and girls of the negro race. Finding the city unsuitable for such a school, this property was sold and a small farm was purchased outside of the city limits.

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This institution has steadily grown until now it accommodates 200 students and employs six teachers. The students have the advantage of a good library. Dr. D. M. Minus is the efficient President. The Board of Trustees consists of both white and colored citizens.

HARBISON COLLEGE.

Harbison College, located at Abbeville, is an institution designed to promote the industrial, literary and religious progress of colored youth of both sexes.

The literary course is adopted with the view of securing sound elementary training that will make those graduating from the College proficient for the active duties of life.

The training afforded by the various departments of the school are steps by which the students can attain to a higher plane of industrial life and Christian character.

The College is located about one mile and a half from the public square on the road leading from Abbeville to Due West near the old Long Cane Presbyterian Church.

The site upon which the following four brick buildings are erected consists of 67 acres of land: Ferguson Hall, for girls; the Henry Phipps Hall, for boys; Harbison Hall, containing recitation rooms, the College chapel, reading room, library, president's office, and the Y. M. C. A. Hall, and the President's cottage. There are three annexes to Ferguson Hall which are used for laundry, rooms and a kitchen. The two dormitories are three-story, and the main building, or Harbison Hall, is two-story.

The College owns a farm of 210 acres of fine farming land, which is to provide the boys with means whereby they can support themselves in school, and which is also to furnish them with an opportunity of learning practical farming. The main object of the farm is to teach the boys to be skilled agriculturists.

Harbison College is the outgrowth of Ferguson Academy, which was established in the town of Abbeville a quarter of a century ago. Its development into a college is due to gifts received from the friends of Christian education—notably the gifts received from Mr. Henry Phipps, of New York, and Mr. Samuel P. Harbison, of Allegheny, Pa. The wife and sons of the latter have also made substantial gifts to the work, making possible at the present time accommodations for about one hundred and twenty-five boarding students and a hundred day students.

The College is under the auspices of the Board of Missions for Freedmen, whose headquarters are at Pittsburg, Pa.

At a meeting of the State Board of Education, September 16, 1905, the College was placed on the list of the colleges in the State whose graduates are entitled to teachers' certificates on presentation of diplomas.

Besides the colleges already mentioned for educating the negro race, there are many other good normal schools and colleges in other parts of the State: the Brainerd Institute at Chester, supported by the Northern Presbyterian Church, and one at Winnsboro, under control of the same church; the Lancaster Normal and Industrial Institute, under the care of the Zion Methodist Episcopal Church, and one at Kershaw, under the Baptists; another at Camden; one at Cheraw; a seminary at Mayesville, for the purpose of training negro women in the domestic arts; two at Abbeville, the Harbison College and the Williams College—the latter is controlled by the Southern Presbyterian Church; there is one at or near Beaufort. There are others in the State, but they can only be mentioned, as no definite information is furnished. It all goes to show that the negroes are being educated; but whether along the proper lines or not, yet remains to be seen, as this is a question that perplexes the thoughtful men of both races.

STATE REFORMATORY.

The South Carolina Industrial School, or State Reformatory, is located at Florence, where an admirable site has been secured by the co-operation of the people of Florence and the Atlantic Coast Line. The purpose of the institution is to provide a means of educating and training in honest trades boys to whom the doors of the public school are closed by reason of their tendency to vice and crime, to prevent the development of these tendencies and to reform those in whom the cancerous growth has made a start.

The land on which the school is located consists of over a hundred acres of good lands, for which a hundred dollars an acre was refused by the Coast Line, but which was freely given by President Walters for this purpose. It is ideal

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land for experimental farming. It embraces the old Confederate stockade, in which so many Yankee prisoners were confined during the Civil War. It overlooks the pretty city of Florence from something of an eminence just beyond the city limits and borders on the national turnpike from the city to the National Cemetery, and in the rear is bordered by a bold creek.

Buildings will soon be erected for the accommodation and the training of about one hundred and fifty boys, who may be sent there by order of the circuit or probate judge of their county, and who will be educated in English and plain mathematics, history and geography, and taught some useful trade by which they may become worthy citizens of their State and saved from the career of vice and crime into which they may have made an entrance.

The State has, so far, made appropriation for nothing but the preliminary work; the city of Florence has subscribed $4,000, and, with the aid of the Coast Line, has given this ideal site for the building. The work of construction has been delayed by the failure of the last Legislature to make a sufficient appropriation to carry on the work, but it is confidently believed that with better understanding of the intent and purpose of the institution and its board of trustees the work will be well under way in a short while, and this very necessary charitable and educational institution will be ready for its work of saving the unfortunate youths of the State.



TYPE OF PUBLIC SCHOOL.

SUMMER SCHOOLS.

In 1899 Superintendent J. J. McMahan and the State Board of Education, feeling the need of improving the condition of the teachers and advancing the interest of the public schools, organized a system of summer schools. These were to supplant the State and County Institutes, which had served their purpose and had done good for a time. A State Summer School is held each year for white teachers in some city where sufficient accommodations can be had, generally in Rock Hill at Winthrop College. There is also a State Summer School for negroes.

These Summer Schools are under the direct control of the Superintendent of Education, and he personally supervises their work. Hundreds of teachers avail themselves of the advantages offered by the skillful teachers and noted educators employed and derive much benefit from this source.

Nearly all of the counties have Summer Schools, one for each race, generally conducted by from one to three teachers. Thousands of the teachers have been reached in this way. There is now a disposition to have several counties join in one Summer School, called a District School, which would give a larger faculty and a broader field.

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The effect of the Summer School is threefold—it benefits the teacher technically, socially and professionally, and all teachers should avail themselves of the advantages offered.

PUBLIC HIGH SCHOOLS.

The War Between the States and the consequent demoralization and poverty of the people swept out of existence the private academies, so long the pride of the State as preparatory schools. It took a number of years for the public schools to become either popular or efficient. The revenue for the support of the common schools was inadequate, but by 1880 a few cities and towns were levying a special supplementary school tax. Now nearly every town of five hundred population is levying this supplementary tax. The larger towns added high school grades to their public schools, and for nearly twenty years these higher grades have furnished the greater part of the high school facilities in the State. In many places a tuition fee has been charged in the high school department in order to maintain it. In most instances these high schools are not adequately equipped as to teaching force or apparatus, consequently their courses of study are short and narrow. In the villages and rural communities the high school work has been of a very irregular and uncertain character. One year a



TYPE OF PUBLIC SCHOOL.

school may offer fairly good high school training; the next year, owing to a change of teachers, the same school may offer no real high school work.

Through the efforts of the State Board of Education, the Association of City Superintendents, the State Teachers' Association, and a few earnest legislators, a high school law was enacted February, 1907. This law looks toward the establishment of secondary schools under State aid and State supervision. At present the State appropriation is small—$50,000 annually, but it is to be used to supplement and encourage local effort. No high school can receive from the State more than fifty per cent. of its own income, nor can it receive more than $1,200 aid. Each high school receiving State aid must employ not fewer than two teachers, nor have fewer than twenty-five high school pupils. The courses of study and the details of management are left to the local high school boards; only the inspection and classification of these schools are given to the State Board of Education.

Under this law a county, a township, or aggregation of townships, an aggregation of school districts, or an incorporated town of not more than one thousand inhabitants can establish a high school and receive State aid. Since this is the first direct attempt on the part of the State to foster secondary schools, a defective law was to be expected. However, the defects are within easy remedy.

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Fifty-eight high schools are in operation under this Act at this time, December 1, 1907. Nearly all these schools will be established either by several rural school districts combining to form a high school district and levying a high school tax, or by the union of a larger town with some adjoining rural districts.

The high school movement means the enlarging of high schools already in operation, by lengthening and broadening the courses of study; the establishing of schools where none exist; the employment of more competent teachers; the improvement of the common schools; the raising of college entrance requirements and college standards; and the bettering of agricultural and other industrial conditions.

THE RURAL SCHOOL IMPROVEMENT ASSOCIATION.

In 1903 there was inaugurated a movement for the improvement of the school buildings and grounds in our rural districts. Already the good accomplished is marked. There are rural school improvement societies in every county in the State, in all numbering more than 2,000 members, mostly women. Prizes are



TYPE OF PUBLIC SCHOOL.

offered annually for greatest improvement made, and there is a spirit of generous rivalry abroad in the land. New and beautiful buildings are being erected, the old ones are being repaired and improved, the grounds are being planted in shade trees or flowers. The enthusiasm shown in beautifying the grounds is wonderful.

Due credit should be given to President D. B. Johnson for inaugurating this movement, and to his able coadjutors, Superintendent O. B. Martin and Miss Mary Nance. The latter is the President of the State Association of Rural School Improvement Society and general field agent, and her work is vigorously pushed and well executed. There are three branches of this organization: 1. The State Association; 2. The County Association; 3. The Local Association.

THE PRESS.

The press is a powerful factor in education. It is a mighty and potent agent in moulding the thoughts of the people and in controlling legislation.

The kind, character and number of periodicals and newspapers published in the State are indicative of the tastes and morals of the people. Judged by this test, South Carolina can claim rank among the most enlightened and progressive of the States that form the Union.

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The great prominence that South Carolina has taken in social, political and religious affairs can be attributed in a large measure to the enterprise and ability of her great dailies.

The rural route delivery, now so successfully operated, brings this means of education to every door in the rural communities. No one, however remote from the cities, towns and villages, need be deprived of this privilege, which brings them in direct communication with the outside world.

The newspaper is as necessary a means to education as textbooks.

Dr. Ramsey says that "newspapers were first published in South Carolina in 1730 by Lewis Timothy." Prof. Rivers doubts this and says that the first newspaper, *The South Carolina Gazette,* appeared January 8, 1731, under the management of Thomas Whitmarsh, a weekly at the cost of £3, a quarto, 11½ inches by 7 inches, two columns to the page. A copy of the first issue is in the Charleston Library.

This paper flourished till the death of the proprietor in 1733. He was succeeded by Lewis Timothy. *The Gazette* lived until 1837, when it was purchased by *The Courier,* founded in 1803. *The Courier* became a part of the *News and Courier* in 1873.

From this the great daily can claim that it descended from Thomas Whitmarsh.

Many newspapers sprang into existence from 1731 to 1865. It is needless to mention these except that one which had so great an influence on affairs, *The States Rights and Free Trade Evening Post.* This one was founded in 1831 by John A. Stewart to promulgate the doctrines of Nullification and Free Trade. It died when Nullification passed away. In 1812 *The Investigator* was established by John Mackey and John Lyde Wilson and earnestly advocated the second war with Great Britain. In 1814 Mr. Wilson became Governor of the State. He was a very literary man, codified the laws of the State in 1827, and was the author of the celebrated "Code of Honor."

Up to the time of the War between the States the two leading newspapers were *The Courier* and *The Mercury. The Courier* stood for opposition to Nullification and Secession; advocated co-operation instead, as a choice of evils, and in 1860 reluctantly yielded to the withdrawal from the Union in view of the election of Abraham Lincoln as a sectional President. During the Mexican War it showed much enterprise in sending special couriers, who outstripped the United States mails. This was the first step in the formation of press associations. *The Courier* was purchased by its rival, *The Daily News,* in 1873, and became *The News and Courier.*

The Charleston Mercury was founded in 1812 by Edward Morford, and in 1823 was purchased by Edward Pinkney. It represented the "Free Trade and State Rights Party of South Carolina," and was bold and eloquent in its utterances. It suspended in 1868.

Says Col. T. B. Crews, of the *Laurensville Herald,* the nestor of South Carolina journalism:

The earliest date of which I have any record of the existence of a newspaper in Columbia is the year 1792, just one hundred and fifteen years ago this month (July). The name of the publication was "The South Carolina Gazette," but who the publisher and editor were I have no way of finding out. That such a paper was published in Columbia, however, at such early date, is evidenced by the following extract, clipped from that paper and sent to the *Philadelphia National Gazette,* from Camden, S. C., July 5, 1792:

"From the *South Carolina Gazette,* printed at Columbia.

"Camden, July 5, 1792.

"The anniversary of our independence was welcomed with the usual demonstration of joy by our citizens. * * * A well-served dinner was prepared at the State House, at which a very numerous and respectable company was present."

Other papers published in Columbia, *The Southern Chronicle,* in 1838-48, and the *Carolina Times,* by Gyles, LaMotte & Greneker and E. H. Britton, 1850-54.

The States Rights Republican, by Isaac C. Morgan, Alexander Carroll as editor, began in 1848 or 1849 and continued until the war began, and perhaps for a short time during the war.

Edwin DeLeon and W. B. Carlisle published the *Carolina Telegraph* about the same time.

The Daily South Carolinian was published by Johnson and Cavis. Dr. R. W. Gibbes subsequently bought and edited this paper. I. C. Morgan also published

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NOTE.—For further information in regard to the press of South Carolina see pages at end of volume as indicated by index.

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the *Palmetto State Banner;* and in 1851 Major S. A. Goodman, a very able writer, published *The Illustrated Family Friend,* a handsome weekly.

The Southern Guardian, a daily and also a weekly, was published in Columbia from 1857 to some years after the war, by Prof. Charles P. Pelham, editor and proprietor. The great novelist, William Gilmore Simms, was associated with Mr. Pelham. This paper did the State printing for a number of years. The editor published other periodicals and did bookbinding also. The plant occupied the spot where Bryan's Book Store and Printing Office now stands, extending back to Assembly Street. It was destroyed by Sherman's fire, and did not resume publication for two or three years, and then it did noble fighting against the corruption of *scalawags* and *carpetbaggers,* and was a bitter foe to Radical misrule. The late Wm. H. McCaw, a brilliant journalist, who died in the midst of the fight, and the scholarly James Wood Davidson, were on the staff. *The Southern Guardian* lived a useful life and died revered by all good and true Carolinians, as it was a brave defender of right and truth.

Other papers in Charleston, Columbia and different parts of the State had much popularity. They were chiefly political organs, lacking much of what is now considered essential to journalism.

There were several literary periodicals. *The Southern Presbyterian Review,* Columbia, S. C., from 1847 to 1900, wielded great influence in the religious world, with such men as Thornwell, Palmer, Woodrow and Girardeau as contributors to its columns.

The Southern Quarterly Review and *Russell's Magazine* contained thought of the highest order. Nearly all the papers suspended during the war for lack of material, want of patronage and compositors.

The year 1865 was almost a blank in journalism. The Columbia papers were destroyed by Sherman. Due credit should be given to Julian A. Selby, who in 1865 brought a bag of type on his back to Columbia from a neighboring town and founded *The Phœnix,* with William Gilmore Simms as editor.

One by one the county papers resumed operation. Since that time the progress has been marked. Old papers have been consolidated and many new ones have sprung up.

Notable among the editorial writers of the last quarter century in South Carolina journalism were Francis W. Dawson, of the Charleston *News and Courier,* and the able and lamented N. G. Gonzales, founder of *The State,* of Columbia, to whose memory a monument erected by the people of the State, stands in Columbia, just off the Capitol grounds.

NEWSPAPERS.

The following is a list of newspapers published in the State at the present time:

Daily.

Anderson Mail (except Sundays); Charleston Post (except Sundays); Charleston News and Courier; Columbia Record (except Sundays); Columbia, The State; Florence Times (except Sundays); Greenville News (except Sundays); Orangeburg News (except Sundays); Spartanburg Herald (except Sundays); Spartanburg Journal (except Sundays).—11.

Semi-Weekly.

Aiken Journal and Review; Anderson Intelligencer; Pee Dee Advocate (Bennettsville); Charleston News and Courier; Chester Lantern; Chester Reporter; The State (Columbia); Gaffney Ledger; Georgetown Times; Greenville News; Lancaster News; Newberry News and Herald; Newberry Observer; Rock Hill Herald; Rock Hill Record; Union Progress; Yorkville Enquirer.—17.

Weekly.

Abbeville Medium; Abbeville Press and Banner; Aiken Recorder; People's Recorder (Anderson); Bamberg Herald; Barnwell People; Barnwell Sentinel; Batesburg Advocate; Beaufort Gazette; Belton Times; (Bennettsville) Marlboro Democrat; (Bishopville) Leader and Vindicator; Blacksburg Chronicle; Camden Chronicle; Camden People; Wateree Messenger (Camden); Charleston Deutsche Zeitung; Charleston Protective League; Charleston Messenger; Keystone (Charleston, Woman's); Cheraw Chronicle; Chesterfield Advertiser; Clifton World (Spartanburg); Clinton Chronicle; Clinton Gazette; Horry Herald (Conway); Farmers' Courier (Darlington); New Era (Darlington); Darlington News; Darlington Press; Dillon Advertiser; Dillon Herald; Progress

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(Donalds); Easley Progress; Edgefield Advertiser; Edgefield Chronicle; Edgefield News; Florence Times-Messenger; Fort Mill Times; Fountain Inn Journal; Cherokee News (Gaffney); Greenville Mountaineer; Greenville News and Views; Greenwood Index; Greenwood Journal; Observer (Greer's); Hampton Guardian; County Messenger (Hartsville); Chronicle (Honea Path); Johnston News-Monitor; Kershaw Era (Camden); Kingstree County Record; Kingstree Mail; Laurens Advertiser; Laurens Herald; Laurens Vidette; Lexington Dispatch; McCormick Messenger; Clarendon Sentinel (Manning); Farmer (Manning); Times (Manning); Marion Plane; Marion Star; Echo and Press (Monck's Corner); Mullins Enterprise; Ninety-Six Star; Orangeburg Patriot; Orangeburg Times and Democrat; Pelzer Enterprise; Pickens Sentinel-Journal; Dorchester Eagle (St. George); Commercial Advance (St. Matthews); Echo and Press; (St. Stephens); Saluda Standard; Spartanburg Herald; Spartanburg Free Lance; Carolina Spartan (Spartanburg); Summerton Advance; Summerville News; Sumter Herald; Sumter Prospector; Sumter Watchman and Southron; Timmonsville Enterprise; Union Times; Keowee Courier (Walhalla); Oconee News (Walhalla); Walterboro Press and Standard; Horse Creek Valley News (Warrenville); News and Herald (Winnsboro); Woodruff News and Views; Yorkville New Era; Farmers' Union Sun (Columbia); The Landrum Gazette (Landrum).—93.

Semi-Monthly and Monthly.

Shields and Diamonds (Charleston College Bi-monthly); Tri-State Odd Fellow (Semi-monthly, Columbia); Darlington Agricultural Herald (Monthly); Grit and Steel (Sporting, Monthly, Gaffney); Journal of South Carolina Medical Association (Greenville); Newberry Southern Farmer; Pendleton Record (Semi-monthly); Timmonsville Carolina Planter; Greenville Monitor; South Carolina Pythian (Columbia).—10.

Religious.

Diocese (Monthly), Columbia; Synod's Home Missionary (Monthly), Greenwood; Beaufort Churchman (Weekly); Our Monthly (Clinton); South Carolinian (Weekly), Columbia; Way of Faith (Weekly), Columbia; Associate Reformed Presbyterian (Weekly), Due West; Florence Chronicle (Monthly); Baptist Courier (Weekly), Greenville; Greenwood Baptist Press (Monthly); Greenwood Christian Appeal (Weekly); Spartanburg Link (Weekly); Southern Christian Advocate (Weekly), Spartanburg; Union Baptist Press (Weekly).—14.

Negro.

Southern Reporter (Weekly), Charleston; Chester Torchlight (Weekly); Southern Sun (Weekly), Columbia; Greenville Enterprise (Weekly); Friendship Banner (Weekly), Rock Hill; Messenger (Weekly), Rock Hill; Defender (Weekly), Sumter; Southern Ploughman (Monthly), Columbia.—8.

ILLITERACY.

According to the United States Census Department, the term "illiteracy" includes all persons at least ten years of age and upwards unable to read and write their own language—this means, of course, in this country the English language.

In the United States these form about one-tenth (106.6 per 1,000) of the entire population. The proportion of illiterate persons in this country is less than that in any European country, except Germany, Sweden, Norway, Denmark, Finland, Switzerland, and Scotland. In the Netherlands, England, and France, however, the percentage of illiteracy is but a slight degree higher than in the United States; but in the remaining countries of Europe it is much more prevalent. It must be borne in mind that the term United States has reference to Continental United States, and not to the island possessions and Alaska.

In the United States the proportion of illiterates has steadily declined for every class of population since 1880. This proportion is less for young persons than for those advanced in years; and as a general rule the illiteracy increases in each older age group above twenty-five. This reflects the extension and improvement of elementary education, the younger generation having enjoyed better educational advantages than the older.

This decline in illiteracy between the periods of childhood and youth is more pronounced in the States of the South and Southwest, where illiteracy among children was especially prevalent in former decades. The injurious effect of the Civil War, most marked in the South, is shown by the fact that among native

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white males in 1906 the proportion of illiteracy was much higher in the age group 50 to 59 than in the next older or next younger age groups.

Child illiteracy varies greatly in different sections of the country. It is somewhat less in the North and in the West than in the South; but this is largely dependent upon four existing circumstances. First, the South is handicapped by a smaller per capita wealth; second, it has a larger proportion of children; third, it is an agricultural region, and, therefore, a thinly settled section; fourth, it has separate schools for the races. Under equal conditions there is about the same proportion of illiteracy in the South among the native whites as elsewhere in the Union.

In the larger cities and towns, the statistics show in favor of the South. The South, as has been said, is largely an agricultural section, thinly settled, with a large proportion of the population of the negro race, elsewhere in the Union called foreign; hence no fair or just comparison can be made between it and other sections of the United States. All reports from which census statistics are drawn are in a measure defective and misleading and inaccurate. This is especially true of the Southern States, from the very nature of the case.

It is known that more negro children, in proportion to the population, attend the public schools than do whites, and that they are rapidly being taught to read and write. These facts as they really are do not reach the Census Bureau in the light in which they should.

There has been a steady gain, since 1880, in favor of females in respect to illiteracy. The excess of female illiteracy was less in 1900 than in 1890 and less in 1890 than in 1880. The change is shown by the following table:

Census.	Illiterates per 1,000. Males.	Females.	Excess of Female Illiteracy.
1880	158.3	181.6	23.3
1890	123.5	143.8	20.3
1900	101.4	112.2	10.8

But, if the test is applied to the school age groups, the figures are changed, and the excess of illiteracy is with the males. Hence the conclusion is easily drawn that the time is near when there will be no difference in illiteracy with the sexes—in fact, we may say that the preponderancy of illiterates will be male.

This table shows the tendency: the older the group age, the greater the female rate of illiteracy:

Age Period.	Illiterates per 1,000. Males.	Females.
At least 10	101.4	112.2
10 to 14 years	79.8	63
15 to 17 years	85.4	62.4
18 to 20 years	91.6	78.7
21 to 24 years	89.5	82.7
25 to 34 years	87.6	95.2

This is strictly in accord with the facts. Only till recent years has female education received just and equal attention with that given to the males.

Again, nearly one-half of the non-Caucasian population and less than one-twentieth of the native whites are illiterate. These proportions are very materially reduced if only children of school age are considered. In this case less than one-third of the non-Caucasian children of school age are illiterate, and about one-thirtieth of the native white children. Why? Because, as is well known, the negro children, which compose the larger part of the non-Caucasian population, as a rule live in the thinly settled country districts, where school advantages are poorer and the standards of education are lower, while the whites, as a rule, have their homes in the towns and cities, and enjoy excellent school privileges.

Taking the United States as a whole, the ratio of illiteracy among the non-Caucasians is nine times as great as that for the native whites; but in the Southern States the proportion is not much more than three times as great. These statements are gathered from the most recent Census Reports of 1906.

The difference, then, between the two races as regards child illiteracy is not so marked in the South as in the North. As the proportion of illiteracy decreases for one race it usually decreases for the other also. Yet the Southern people are charged with doing little for the education of the negro. The facts show that within the last quarter of a century the ratio of illiteracy for Southern whites has been reduced seven-twentieths and that for negroes has been

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reduced five-twentieths—the relative reduction has been greater for the whites; but the absolute reduction is greater for the negro. This is because of the two facts: that the negro had but recently been in a state of slavery, and that they form a large majority of the population in the South. It is a truth, however, that the negro race is decreasing its rate of illiteracy faster than any other class in the United States.

COLLEGE PRESIDENTS IN SUCCESSION.

COLLEGE OF CHARLESTON.

Rev. Robert Smith.....1791-1797
Mr. Thomas Bee.....1797-1805
Rev. George Buist.....1805——
Rev. Jasper Adams.....1824-1836
Dr. William Brantley.....1836-1844
Dr. Perronneau Findley.....1846-1857
Dr. N. Russell Middleton.....1857-1880
Dr. Wm. E. Shepherd.....1882-1897
Dr. Harrison Randolph.....1897——

SOUTH CAROLINA COLLEGE.

Jonathan Maxcy.....1804-1820
Thomas Cooper.....1820-1834
Robert Henry.....1834-1835
Robert W. Barnwell.....1835-1841
Robert Henry.....1841-1845
William C. Preston.....1845-1851
James H. Thornwell.....1851-1855
Charles F. McCoy.....1855-1857
A. B. Longstreet.....1857-1861
Robert W. Barnwell.....1866-1872
William Porcher Miles.....1880-1882
John M. McBryde.....1882-1892
James Woodrow.....1892-1897
Frank C. Woodward.....1897-1902
Benjamin Sloan.....1902-1908
(New President to be elected latter part of 1908, vice Sloan, resigned.)

SOUTH CAROLINA MILITARY ACADEMY.

Arsenal.

*Capt. M. C. Shaffer.....1842
Capt. Alfred Herbert.....1843-1845
Capt. Joseph Matthews.....1845-1856
Capt. C. C. Tew.....1856-1858
Capt. J. P. Thomas.....1858-1865
Capt. W. F. Graham.....1843-1844

Citadel.

*Capt. C. R. Parker.....1842
Maj. R. W. Colcock.....1844-1853
Maj. F. W. Capers.....1853-1860
Maj. P. F. Stevens.....1860-1861
Maj. J. B. White.....1861-1865
Col. J. P. Thomas.....1882-1885
Gen. Geo. D. Johnston.....1885-1890
Col. Asbury Coward.....1890-1908
(New Superintendent to be elected latter part of 1908).

INSTITUTION FOR DEAF, DUMB AND BLIND.

Newton P. Walker.....1849-1861
None from 1861-1865.
James S. Henderson and Newton F. Walker.....1866-1867
Closed from 1867-1869.
John M. Hughston.....1869-1872
Newton F. Walker.....1872-1873
Closed because of Radical rule.
Newton F. Walker.....1876-1908

CLEMSON COLLEGE.

H. A. Strode.....1890-1894
E. B. Craighead.....1894-1896
H. S. Hartzog.....1896-1902
P. H. Mell.....1902-1908

WINTHROP COLLEGE.

D. B. Johnson.....1886-1907

ERSKINE COLLEGE.

E. E. Pressly, D. D.....1837-1847
R. C. Grier, D. D.....1847-1858
E. L. Patton, D. D.....1859-1865
R. C. Grier, D. D.....1865-1871
W. M. Grier, D. D.....1871-1899
F. Y. Pressly, D. D.....1899-1906
J. S. Moffatt, D. D.....1906——

FURMAN UNIVERSITY.

Dr. James C. Furman.....1851-1881
Dr. Charles Manly.....1881-1897
Dr. A. P. Montague.....1897-1902
Dr. C. H. Judson.....1902-1903
Dr. E. M. Poteat.....1903-1908

*When these military posts were changed into schools.

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WOFFORD COLLEGE.

W. M. Wightman, D. D.....1854-1859
A. M. Shipp, D. D.....1859-1875
J. H. Carlisle, LL. D.....1875-1902
Henry N. Snyder, LL. D.....1902-1908

LEESVILLE COLLEGE.

Rev. J. E. Watson.....1881-1885
J. E. Beard.....1885-1887
L. B. Haynes.....1887-1908+

SOUTH CAROLINA CO-EDUCATIONAL INSTITUTE.

Col. F. N. K. Bailey.....1891-1907

PRESBYTERIAN COLLEGE OF SOUTH CAROLINA.

W. S. Lee.....1880-1885
R. P. Smith.....1885-1888
J. W. Kennedy.....1888-1890
J. I. Cleland.....1891-1894
E. C. Murray.....1894-1897
A. E. Spencer.....1897-1904
Rev. W. G. Neville.....1904-1907
Rev. Robert Adams.....1907——

CLIFFORD SEMINARY.

B. G. Clifford, D. D.....1881-1907

CONVERSE COLLEGE.

B. F. Wilson, D. D.....1889-1902
Rev. R. P. Pell, Litt. D.....1902-1908+

COLUMBIA COLLEGE.

Rev. Whitford Smith, D. D...1859-1860
Rev. William Martin.....1860-1861
Rev. H. M. Mood.....1861-1864
Closed from 1864-1873.
Rev. S. B. Jones.....1873-1876
Hon. J. L. Jones, Ph. D.....1876-1881
Rev. O. A. Darby, D. D.....1881-1890
Rev. S. B. Jones, D. D.....1890-1894
Rev. J. A. Rice, D. D.....1894-1900
Rev. W. W. Daniel, D. D.....1900-1908

DUE WEST FEMALE COLLEGE.

Rev. J. I. Bonner, D. D.....1859-1881
Prof. J. P. Kennedy.....1881-1887
Mrs. L. M. Bonner.....1887-1895
Rev. C. E. Todd.....1895-1899
Rev. James Boyce.....1899——

COLLEGE FOR WOMEN.

Rev. W. R. Atkinson, D. D....1890-1896
Rev. R. P. Pell, LL. D.....1896-1901
Miss Euphemia E. McClintock..1901-1907

GREENVILLE FEMALE COLLEGE.

Rev. A. H. Duncan.....1854-1866
Rev. C. H. Judson, LL. D.....1866-1878
Rev. A. S. Townes, A. M.....1878-1894
Rev. M. M. Riley, D. D.....1894-1900
Col. E. H. Murfee, LL. D.....1900-1901
E. C. James, Litt. D.....1901-1908+

GREENVILLE COLLEGE FOR WOMEN.

A. S. Townes, Ph. D.....1894-1907

LANDER COLLEGE.

Rev. Samuel Lander, D. D....1872-1905
J. O. Willson, D. D.....1905-1908+

LIMESTONE COLLEGE.

Thomas Curtis, D. D., and
William Curtis, D. D.....1845-1865
Capt. Harrison P. Griffith and
Prof. H. O. Sams.....1881-1896
Prof. John R. Mack.....1896-1899
Prof. L. D. Lodge, LL. D...1899-1908+

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REIDVILLE FEMALE COLLEGE.

Rev. R. H. Reid.....1857——
Rev. Thos. Ward White.
Maj. John A. Leland.
Rev. G. B. Clifford, D. D.
Rev. R. P. Smith.
M. L. Venable.
Joseph Venable.
A. E. Spencer.
D. B. Simpson.
L. P. McGhee.
J. Whitney Reid.
Rev. B. P. Reid.

REIDVILLE MALE SCHOOL.

Rev. T. E. Davis.
T. C. Duncan.
Rev. E. F. Hide.
Preston C. Johnson.
Rev. Theo. Smith.
R. P. Adams.
W. C. Kirkland.
Sam'l F. Boston.
William Tennant.
F. P. Neel.
W. D. McCorkle.
Thomas Williamson.
Geo. Briggs.
R. F. Hutcheson.
J. L. McWhorter.
R. L. Goff.
W. D. Acker.
J. H. Brannon.....1908+

CHICORA COLLEGE.

Rev. J. F. McKinnon.....1893-1895
Rev. S. R. Preston, D. D.....1895-1906
Rev. S. C. Byrd, D. D.....1906——

CONFEDERATE HOME COLLEGE.

Mrs. M. A. Snowden.....1867-1901
Miss Harriet E. Rouan.....1901-1908+

LUTHERAN THEOLOGICAL SEMINARY.

Rev. J. A. Morehead, D. D....1898-1903
Rev. A. G. Voigt, D. D.....1903-1908+

COLUMBIA SEMINARY.

Chairman.

Thomas Goulding, D. D.....1828-1834
Charles C. Jones, D. D.....1834-1838
George Howe, D. D.....1838-1853
B. M. Palmer, D. D.....1853-1856
A. W. Leland, D. D.....1856-1858
J. H. Thornwell, D. D.....1858-1862
James Woodrow, D. D., LL. D..1862-1886
J. L. Girardeau, D. D.....1886-1895
W. M. McPheeters, D. D.....1895-1907

ERSKINE THEOLOGICAL SEMINARY.

Rev. J. T. Pressly, D. D.....1837-1842
Rev. R. C. Grier, D. D.....1842-1854
Rev. James Boyce, D. D.....1854-1870
Rev. W. L. Pressly, D. D.....1870-1886
Rev. F. Y. Pressly, D. D.....1906——

CHARLESTON ORPHANAGE.

Chairman.

*Anoldus Vanderhorst.....1790-1792
*John Huger.....1792-1792
†Charles Lining.....1792-1796
Rawlins Lowndes.....1796-1797
John Bee Holmes.....1797-1808
Henry William DeSaussure...1808-1812
Daniel Stevens.....1812-1819
John Dawson.....1819-1823
Thomas Lee.....1823-1825
Thomas Roper.....1825-1826
James Jervey.....1826-1838
Henry Alexander DeSaussure.1838-1865
William Cottell Bee.....1865-1881
James Dexter Mowry.....1881-1885
Jacob Small.....1885-1893
Geo. W. Williams.....1893-1904
F. J. Pelzer.....1904-——

THORNWELL ORPHANAGE.

W. P. Jacobs, D. D.....1872-1907

CONNIE MAXWELL ORPHANAGE.

J. L. Vass, D. D.....1891-1900
A. T. Jamison.....1900-1908

*Ex-officio.
†First chairman elected.

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EPWORTH ORPHANAGE.

G. H. Waddell, D. D.....1895-1901
W. B. Wharton.....1901-1908+

ODD FELLOWS' ORPHAN HOME.

T. U. Vaughn.....1904——

COLORED INSTITUTE FOR ORPHANS.

Richard Carroll.....1897-1907

ALLEN UNIVERSITY.

Dr. J. C. Waters.....1881-1885
Prof. J. W. Morris, Ph. D.....1885-1894
Rev. John Q. Johnson, Ph. D..1894-1895
Prof. J. W. Morris, Ph. D....1895-1897
Rev. W. D. Chappelle, D. D...1897-1899
Rev. H. D. Johnson, D. D.....1899-1904
Rev. W. D. Johnson, D. D..1904-1908+

NEWBERRY COLLEGE.

Rev. J. P. Smeltzer, D. D.....1856-1878
Rev. G. W .Holland, D. D., Ph. D.....1878-1895
Hon. Geo. W. Cromer, LL. D..1895-1904
Rev. J. A. B. Scherer, D. D...1904——

AVERY NORMAL COLLEGE.

F. L. Cordozo.....1867
M. A. Warren.
James T. Ford.
A. W. Farnham.
J. A. Gaylord.
A. E. Gordon.
J. A. Nichols.
M. A. Holmes.
E. A. Lawrence.....1908+

BENEDICT COLLEGE.

Dr. W. F. Goodspeed.....1871-1876
Dr. W. G. Colby.....1876-1881
Dr. E. E. Becker.....1881-1895
Dr. A. C. Osborn.....1895-1908+

CLAFLIN COLLEGE.

T. Willard Lewis.....1869-1870
Alonzo Webster.....1870-1873
Edmond Cooke.....1873-1883
L. M. Dunton.....1883-1908+

HARBISON COLLEGE.

Rev. E. W. Williams.....1881-1892
Rev. T. H. Amos.....1892-1896
Rev. C. M. Young.....1896——

STERLING COLLEGE.

Dr. D. M. Minus.....1896-1907

SCHOFIELD INSTITUTE.

Miss Martha Schofield.....1868-1907

LANCASTER NORMAL COLLEGE.

M. D. Lee.....1897-1907

CATHOLIC SCHOOLS AND COLLEGES.

Ursuline Convent, Columbia—Dr. J. J. O'Connell.....1858-1865
" " " Mother Angela Brownfield.....1872——
St. Angela's Academy, Aiken—Sister Celestine Quales.....1900-1908+
Sacred Heart Academy, Greenville—Madam M. Patricia.....1905-1908+
Catholic Mission School, Florence—Father C. D. Wood.....1899-1908+
Cathedral School, Charleston—Sister Aloysius.....1908——
St. Joseph's School, Charleston—Sister Philomena.....1908——
Academy of Lady of Mercy, Charleston—Sister M. Benedicta.....1908——
St. Joseph's Academy, Sumter—M. Raphael.....1908——
Francis Xavier Infirmary, Charleston—Rev. Daniel Berberick.....1908——
St. James (Charleston) School—Rev. Daniel Berberick.....1908——

STATE COLORED COLLEGE.

Thomas E. Miller.....1896-1908+

FRIENDSHIP COLLEGE (ROCK HILL).

M. P. Hall.....1891-1908+

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CONCLUSION.

It has been the endeavor of this sketch to mention every college, high school, school for special instruction, orphanage, and, in fact, all institutions of learning and charity in the State at the present time. There are, no doubt, many schools not named, because of the very great difficulty in obtaining any data upon which to write. However, let it be said that they are all engaged in the great work of trying to enlighten the human race, to elevate mankind, and to make a better people and a stronger citizenship. An humble apology is made for any omission.

On the whole our educational outlook is very bright. With a system of State colleges, better common schools, public high schools, and an awakened people, it is evident that a revival of learning is just before us—possibly the brightest period in our State's history. Commercial progress, manufacturing advancement, industrial and agricultural improvement on all sides, aided by better schools, betoken a bright future nearby.

TOTAL EXPENDITURES FOR PUBLIC SCHOOLS.

Compiled by Supt. A. R. Banks under the direction of the Department of Immigration and Agriculture.

This table shows the development of the Public Schools in South Carolina since their establishment in 1869. The figures for the first two or three years are not accurate, as the system was new and reports irregular. During the years 1878-80 there is apparently a decrease in funds because of the deficiency from J. K. Jillson's administration as State Superintendent of Education. Otherwise the marked increase in attendance, expenditures, and number of teachers and schools is apparent.

Year 1868-9.	School Population.	Enrollment.	Average Attendance.	Number of Teachers.			No. Days.	Salaries Paid Teachers.	Total expenditures.	Number of Schools.
				Men.	Women.	Total.				
1869-0. . . .	168,819	28,409	23,441	255	273	528	80	$57,321	$77,949	630
1870-1. . . .	197,179	45,436	30,448	353	381	734	80	112,975	177,950	796
1871-2. . . .	206,610	75,625	66,056	1,185	713	1,898	80	261,348	277,949	1,639
1872-3. . . .	209,376	94,842	76,822	1,363	822	2,185	100	268,092	320,451	1,919
1873-4. . . .	230,102	100,448	85,594	1,384	926	2,310	100	333,790	369,433	2,061
1874-5. . . .	232,121	125,846	100,719	1,625	1,002	2,627	100	385,023	448,252	2,353
1875-6. . . .	239,264	140,964	110,416	1,723	1,082	2,855	100	369,686	426,468	2,580
1876-7. . . .	237,971	123,085	101,085	1,914	1,154	3,068	100	377,920	423,872	2,776
1877-8. . . .	237,971	102,396	45,879	1,639	1,035	2,674	60	212,581	226,021	2,488
1878-9. . . .	228,128	116,239	104,239	1,844	1,273	3,117	62	261,180	316,197	2,922
1879-0. . . .	228,128	122,463	99,463	1,934	1,232	3,166	67	284,952	319,320	2,901
1880-1. . . .	228,128	134,072	102,345	1,887	1,294	3,181	70	256,555	351,417	2,973
1881-2. . . .	281,664	133,458	98,476	1,904	1,345	3,249	75	309,856	352,910	3,057
1882-3. . . .	281,664	145,974	101,816	1,940	1,473	3,413	80	349,695	373,598	3,183
1883-4. . . .	281,664	173,095	110,996	2,000	1,494	3,494	80	341,177	389,884	3,269
1884-5. . . .	281,664	185,619	114,144	2,115	1,569	3,684	80	343,674	423,473	3,482
1885-6. . . .	281,664	178,023	122,093	2,119	1,654	3,773	70	374,257	428,419	3,562
1886-7. . . .	281,664	183,966	126,696	2,091	1,744	3,835	70	373,641	425,902	3,660
1887-8. . . .	281,664	175,017	125,531	2,227	1,767	3,994	72	368,581	424,426	3,531
1888-9. . . .	281,664	193,434	139,557	2,242	1,961	4,203	72	385,257	430,670	3,922
1889-0. . . .	281,644	194,264	136,358	2,210	2,040	4,250	68	396,333	460,434	3,948
1890-1. . . .	281,664	203,140	147,799	2,163	2,210	4,364	69.6	384,814	460,399	3,510
1891-2. . . .	281,664	209,559	148,603	1,967	2,192	4,159	70.2	392,856	419,856	3,892
1892-3. . . .	281,664	206,749	148,761	2,043	2,355	4,398	73.2	422,590	485,889	3,487
1893-4. . . .	281,664	223,150	162,300	2,114	2,421	4,535	74.1	443,865	456,103	3,406
1894-5. . . .	281,664	226,766	165,115	2,141	2,453	4,594	86	†474,294	532,747	3,508
1895-6. . . .	281,664	223,021	159,254	2,140	2,425	4,565	70	470,084	563,744	3,792
1896-7. . . .	281,664	232,337	172,201	2,028	2,419	4,407	72	*536,623	661,389	4,238
1897-8. . . .	281,664	232,337	172,201	2,028	2,419	4,407	72	*737,700	671,975	4,238
1898-9. . . .	450,200	258,183	182,559	2,245	2,728	4,973	83.3	705,264	893,575	4,342
1899-0. . . .	464,085	275,889	205,407	2,282	2,960	5,242	90.2	726,771	827,586	4,465
1900-1. . . .	464,085	281,891	201,295	2,422	3,142	5,564	88.2	827,013	980,683	4,880
1901-2. . . .	471,200	285,206	208,114	2,536	3,278	5,814	88.2	950,413	1,184,029	4,718
1902-3. . . .	476,840	272,443	208,378	2,537	3,295	5,832	88.3	902,136	1,211,092	4,712
1903-4. . . .	483,385	288,713	209,389	2,588	3,359	5,947	93	1,101,963	1,565,136	4,860
1904-5. . . .	490,214	292,115	214,133	2,526	3,290	5,816	96	1,304,629	1,681,600	4,911
1905-6. . . .	499,832	318,075	218,862	2,592	3,452	6,044	98	1,404,474	1,740,490	5,024
1906-7. . . .	511,896	314,399	222,189	2,540	3,688	6,228	96	1,415,725	1,853,572	4,995
Total. . . .	.....	.....	.....	.....	.....	.....	.....	$19,749,209	$23,479,806	.....

†State Colleges $212,645.84. *Only one report for two years owing to Constitutional Convention.

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ENROLMENT AND AVERAGE ATTENDANCE, BY RACES, IN TOWN AND COUNTRY SCHOOLS.

County.	WHITE.													NEGRO.											
	Enrolment.							Average Attendance.						Enrolment.							Average Attendance.					
	In Towns.			In Country.			Total White Enrolment.	In Towns.			In Country.			Total White Attendance.	In Towns.			In Country.			Total Negro Enrolment.	In Towns.			In Country.			Total Negro Attendance.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.		Boys.	Girls.	Total.	Boys.	Girls.	Total.		Boys.	Girls.	Total.	Boys.	Girls.	Total.		Boys.	Girls.	Total.	Boys.	Girls.	Total.	
Abbeville. . .	520	554	1074	827	994	1821	2895	375	403	778	544	710	1254	2032	590	746	1336	2202	2511	4713	6049	327	563	890	1571	1110	2681	3571
Aiken.	417	447	864	1454	1465	2919	3783	201	242	443	941	1017	1958	2401	277	390	667	1915	2366	4281	4948	232	340	572	1153	1562	2715	3287
Anderson. . .	1557	1435	2992	3240	3045	6285	9277	933	951	1884	1625	1671	3296	5180	505	761	1266	1985	2292	4275	5541	300	504	804	1060	1337	2397	3201
Bamberg. . .	362	337	699	371	363	734	1433	254	241	495	200	216	416	911	346	420	766	981	1165	2146	2912	241	283	524	675	973	1648	2172
Barnwell. . .	432	472	904	915	964	1879	2783	364	424	788	702	834	1536	2324	597	662	1259	1453	1523	2976	4235	455	510	965	643	805	1448	2413
Beaufort. . .	100	175	275	125	228	353	628	100	125	225	115	185	300	525	175	225	400	1000	1188	2188	2588	150	200	350	600	1400	2000	2350
Berkeley. . .	150	160	310	735	854	1589	1899	131	157	288	718	798	1516	1804	253	300	553	1620	1587	3207	3760	231	279	510	1600	1650	3250	3760
Charleston . .	2364	2367	4731	196	169	365	5096	1525	1478	3003	136	117	253	3256	2189	2493	4682	2112	2348	4460	9142	1378	1687	3065	1239	1386	2625	5650
Cherokee. . .	300	400	700	800	1200	2000	2700	200	300	500	650	900	1550	2050	200	500	700	800	900	1700	2400	175	400	575	700	750	1450	2025
Chester. . . .	320	336	656	828	735	1563	2219	257	278	535	427	418	845	1380	396	594	990	1613	1787	3400	4390	271	453	724	804	962	1766	2490
Chesterfield. .	209	267	476	1296	1411	2707	3183	181	205	386	791	749	1540	1926	126	106	232	739	763	1502	1734	97	89	186	491	390	881	1067
Clarendon . .	260	253	513	755	661	1416	1929	179	183	362	451	452	903	1265	201	347	548	1923	2282	4205	4753	163	225	388	1278	1678	2956	3344
Colleton. . .	186	208	394	1300	1786	3086	3480	127	158	285	830	838	1668	1953	60	60	120	1500	1647	3147	3267	60	40	100	700	949	1649	1749
Darlington . .	375	452	827	971	943	1914	2741	346	338	684	672	603	1275	1959	369	457	826	1448	1736	3184	4010	219	299	518	805	1360	2165	2683
Dorchester . .	121	292	413	493	537	1030	1443	98	216	314	398	413	806	1120	139	306	445	527	1050	1577	2022	91	201	292	312	718	1030	1322
Edgefield. . .	345	391	736	575	762	1337	2073	315	360	675	484	685	1169	1844	60	80	140	1965	2119	4084	4224	54	73	127	1562	1972	3534	3661
Fairfield. . .	170	188	358	668	719	1387	1745	136	150	286	543	658	1201	1487	230	290	510	2539	2590	5129	5639	187	230	417	1918	2110	4028	4445
Florence. . .	325	388	713	1242	1407	2649	3362	295	350	645	1030	1146	2176	2821	247	161	408	1560	1378	2938	3346	210	130	340	1132	1045	2177	2517
Georgetown. .	184	195	379	456	557	1013	1392	165	181	346	397	484	881	1227	299	306	605	601	714	1315	1920	271	300	571	590	682	1262	1833
Greenville . .	982	1230	2212	3003	4293	7296	9508	712	986	1698	2002	2862	4864	6562	538	591	1129	1076	2373	3449	4578	368	394	762	718	1582	2300	3062
Greenwood . .	566	590	1156	698	758	1456	2612	398	437	835	432	491	923	1758	461	500	961	2115	2374	4489	5450	206	266	472	1241	1490	2731	3203
Hampton. . .	281	297	578	867	822	1689	2267	189	218	407	633	572	1205	1612	200	224	424	1239	1341	2580	3004	83	107	190	867	1321	2188	2 78
Horry. . . .	169	168	337	2504	2300	4804	5141	174	173	347	1400	1392	2792	3139	95	94	189	332	382	764	953	95	94	189	343	342	685	874
Kershaw. . .	250	346	596	650	953	1603	2199	185	275	460	415	530	945	1405	260	319	579	972	1500	2472	3051	215	260	475	725	1025	1750	2225
Lancaster. . .	514	554	1068	1197	1343	2540	3608	443	528	971	1020	1191	2211	3182	302	420	722	1067	1196	2263	2985	259	236	495	1198	1249	2447	2942
Laurens. . . .	512	601	1113	1112	1429	2541	3654	491	505	996	984	1223	2207	3203	396	548	944	1780	2357	4137	5081	254	398	652	1047	1558	2605	3257
Lee.	234	220	454	684	773	1457	1911	143	150	293	431	618	1049	1342	133	137	270	1160	1667	2827	3097	121	119	240	464	633	1097	1337
Lexington . .	800	788	1588	1434	1445	2879	4467	754	737	1491	923	994	1917	3408	375	394	769	902	850	1752	2521	316	305	621	826	876	1702	2323
Marion. . . .	700	742	1442	1424	1500	2924	4366	420	432	852	854	861	1715	2567	571	500	1071	1705	1684	3389	4460	295	300	595	812	801	1613	2203
Marlboro. . .	473	492	965	691	702	1393	2358	391	396	787	552	523	1075	1862	137	141	278	1719	1728	3447	3725	113	107	220	1314	1324	2638	2858
Newberry. . .	537	549	1086	797	835	1632	2718	419	479	898	457	508	965	1863	453	479	932	1851	2052	3903	4835	329	419	748	808	1152	1960	2708
Oconee. . . .	767	755	1522	1445	1736	3181	4703	425	435	860	762	917	1679	2539	207	282	489	565	569	1134	1623	128	173	301	383	386	769	1070
Orangeburg. .	904	1106	2010	1550	1681	3231	5241	778	930	1708	1320	1352	2672	4380	1260	1576	2836	3072	4620	7692	10528	1380	1460	2840	2850	3490	6340	9180

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ENROLMENT AND AVERAGE ATTENDANCE, BY RACES, IN TOWN AND COUNTRY SCHOOLS.—Continued.

County.	WHITE.													NEGRO.											
	Enrolment.							Average Attendance.						Enrolment.							Average Attendance.					
	In Towns.			In Country.			Total White Enrolment.	In Towns.			In Country.			Total White Av. Attendance.	In Towns.			In Country.			Total Negro Enrolment.	In Towns.			In Country.			Total Negro Av. Attendance.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.		Boys.	Girls.	Total.	Boys.	Girls.	Total.		Boys.	Girls.	Total.	Boys.	Girls.	Total.		Boys.	Girls.	Total.	Boys.	Girls.	Total.	
Pickens. . .	432	498	930	1496	1785	3281	4211	463	502	965	1361	1522	2883	3848	165	181	346	467	496	963	1309	156	142	298	459	447	906	1204
Richland. . .	862	927	1789	992	985	1977	3766	621	698	1319	583	615	1198	2517	537	865	1402	2006	2399	4405	5807	392	671	1063	1634	2084	3718	4781
Saluda. . . .	210	226	436	1048	1079	2127	2563	128	134	262	631	640	1271	1533	162	198	360	1121	1344	2465	2825	116	141	257	840	910	1750	2007
Spartanburg .	1532	1533	3065	3833	3832	7665	10730	1220	1223	2443	3082	3118	6200	8643	1136	1137	2273	1840	2256	4096	6369	756	804	1560	1615	1635	3250	4810
Sumter. . . .	442	367	809	720	1009	1729	2538	330	300	630	613	891	1504	2134	356	599	955	1802	2614	4416	5371	234	380	614	1216	1988	3204	3818
Union. . . .	902	938	1840	1075	1165	2240	4080	610	573	1183	706	807	1513	2696	431	482	913	1411	1368	2779	3692	310	320	630	901	851	1752	2382
Williamsburg	316	314	630	1280	1300	2580	3210	221	224	445	710	759	1469	1914	128	150	278	1896	2513	4409	4687	73	106	179	1006	1403	2409	2588
York.	849	951	1800	1427	1529	2956	4756	641	769	1410	1109	1213	2322	3732	776	788	1564	2619	2717	5336	6900	492	518	1010	1491	1589	3080	4090
Total. . . .	21931	23509	45440	52054	47174	99228	144668	16338	17844	34182	32629	36493	69122	103304	16338	19799	36137	61248	72346	133594	169731	11803	14526	26329	41581	50975	92556	118885

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FROM THE UNITED STATES CENSUS STATISTICS OF 1906.

State.	Population.	No. Children Attending School.	Percentage of Population.
New York	8,066,672	1,311,108	16.59
Massachusetts	3,003,636	497,904	16.12
South Carolina	1,340,316	302,663	21.61
Michigan	2,670,000	521,463	20.39

From this it will be seen that, comparing one New England State, one North Atlantic State, one Southern State, and one Western State, all typical of their respective sections, that the percentage of school attendance in proportion to population is higher in South Carolina, and in fact in all the Southern States, excepting Louisiana, than in the other sections.

SHOWING NATIVE WHITE POPULATION, SCHOOL ATTENDANCE AND PERCENTAGE OF SAME.

States.	Population.	School Attendance.	Percentage.
New York	7,953,639	1,303,108	16.40
Massachusetts	3,062,750	492,404	16.07
South Carolina	582,400	147,053	25.23
Michigan	2,636,875	517,813	19.64

This table shows that, when the native white population is considered, the percentage of attendance in the South is still greater than in the other portions of the United States.

SHOWING COLORED POPULATION IN THE UNITED STATES SCHOOL ATTENDANCE AND COLORED POPULATION IN SOUTH CAROLINA, AND SCHOOL ATTENDANCE.

	Population.	Illiterates.	Percentage.
United States	8,840,789	2,853,194	34.53
South Carolina	782,321	171,022	36.28

This table shows that, while the preponderance of the negro population is greater in South Carolina that in any other State, the ratio of illiteracy is practically the same. In the last ten years the illiteracy among the negroes in South Carolina has decreased 20 per cent.

Grateful acknowledgments are made all the College Presidents who have rendered valuable assistance in the preparation of this sketch, but especially to Col. A. Coward, Prof. E. L. Green, R. B. Cunningham, Dr. H. N. Snyder, Prof. J. I. McCain, Dr. Harrison Randolph, Miss Harriet E. Ronan, Dr. R. P. Pell, J. W. Reid, Prof. Osborn, Miss Irving, Dr. W. P. Jacobs, Dr. Edward F. Parker, Hon. Hartwell Ayer, Rev. Dr. Mikell, Col. Crews, Father Hegarty, Supt. O. B. Martin and W. H. Barton, Prof. W. H. Hand, Mr. A. S. Salley, Miss Mary Nance—and to the sketch of Prof. R. Means Davis in 1882, and to the "History of Higher Education in South Carolina," by Colyer Meriwether—and to the uniform kindness of Miss Linnie LaBorde, the State Librarian, and, lastly, to Col. E. J. Watson and his office force.

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CHAPTER VIII.----Agriculture.

From the foundation of the colony, South Carolina has been an agricultural State, the population engaging in the growing of cotton, rice, corn and tobacco principally. Indigo was in the early days a staple crop, and of late years tobacco and trucking have become leading crops, though cotton and corn are still the chief staple crops. Agriculture was supreme in the State until the coming of the marvelous development of the cotton manufacturing industry, and as this volume is being prepared it is a close contest between these two great industries in the matter of the value of annual production—agriculture, however, having the advantage that its competitor is dependent upon its maintenance and ever-increasing development. Though cotton manufactured products had exceeded in value the agricultural products in 1905 by $3,000,000, in 1907 the values were almost balanced. Agriculture has not developed with the phenomenal rapidity of the

ACREAGE OF CROPS IN SOUTH CAROLINA.

Crop.	Acreage.	
	1908.	1907.
Cotton	2,512,260	2,463,000
Corn	1,993,740	1,974,000
Wheat		314,347
Oats		195,000
Hay		60,682
Rice		19,036
Tobacco		27,000
Potatoes		9,065
Rye		4,226

VALUE OF ALL FARM PRODUCTS.

1907 (cotton crop alone)	$72,657,817
1900	68,266,912
1890	51,337,985
1880	41,108,112
1870	41,909,002
Expenses for Fertilizers.	
1900	$ 4,494,410
1890	3,867,418
1880	2,659,969
Expended for Labor.	
1900	$ 6,107,100
Total of Neat Cattle on Farms.	
1900	255,164
1890	268,293
1880	363,709
1870	249,303
1860	506,776

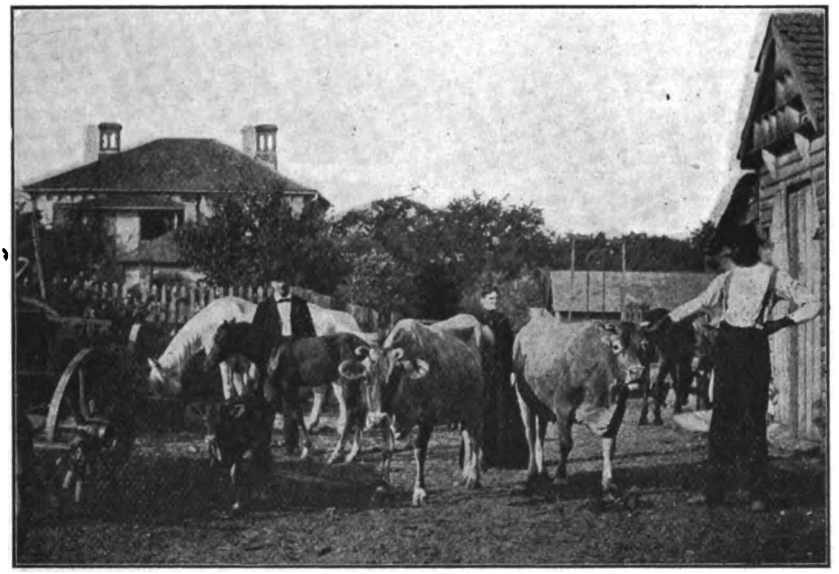
cotton manufacturing industry, but in the last few years there has been a general and substantial revival of interest, and the trucking branch of the industry has developed with remarkable speed. The immediate future is full of promise to the honest and ambitious tiller of the soil.

Climatic, soil and shipping conditions are ideal for yielding large returns from intensive and diversified modes of agriculture, and all indications point to the dawn of a new era in the agricultural history of the State. After scourge of civil war had passed, the people of this State—distinctly an agricultural people—were forced to face, with empty purses, entirely new social and economic conditions, and it has taken some decades for them to adapt themselves to the new conditions.

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A SUMMARY OF ACTUAL AND ESTIMATED VALUES OF AGRICULTURE AND LIVE STOCK.

	1900.	1905.*	Per ct. of Increase 1900-1905.	1907.*	Per ct. of Increase 1900-1906
Value of all farm property	$153,591,159	$170,462,102	10.9	$173,836,290	13.1
Value of all agricultural products	68,266,912	76,721,789	10.8	78,412,764	14.8
Value of all live stock	20,199,859	26,765,732	32.9	28,078,906	39.0
Value of all domestic animals	19,167,229	22,754,973	15.7	22,472,421	17.2
Value of horses	4,846,903	6,610,239	36.3	6,962,906	43.6
Value of mules	8,415,523	11,746,672	39	12,413,901	47.5
Value of milch cows	2,541,723	2,703,107	6.3	2,735,383	7
Value of other cattle	1,792,991	1,890,053	5.4	1,909,465	.6
Value of goats	24,450	.....	....	.....	....
Value of sheep	111,770	120,374	....	122,094	.9
Value of hogs	1,411,516	3,670,287	160	4,122,041	192.



A LEXINGTON COUNTY FARM SCENE.

Farm Life More Attractive.—The tendency has been for two decades for the farmer's son to leave the farm for the city, and for the farmer to turn his farm over to negro renters, tenants or share-croppers. This has gone on until the agricultural industry, particularly during the period of the rapid development of cotton manufacturing, has been left almost entirely to the inferior race. But with the increase of manufacturing population the opportunity for the ambitious young man to rise higher than an operative without a bitter struggle gradually decreased. The glamour of greater variety in social life in the city died in the full realization of what a clerkship in an office or a store meant at a salary insufficient almost for board and lodging.

The people in the cities became so numerous and the people on the farms so few that there was created a great demand for vegetable, fruit, poultry, dairy

*Estimated.

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WHAT CHARLESTON SOILS DO.

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and other diversified agricultural products at excellent prices, and soon some were returning to the farms. The farmer's son is beginning to realize that the farm offers him a quick and a sure road to competency—even wealth, a life of independence and satisfaction, good health, steady nerves, and real happiness; that when he wants a taste of city life he can take a fast train, spend a short vacation among the steel and brick canyons, politely termed city streets, and come back to his happy, health-giving home glad to get there. Educational advantages are today being offered every farmer's boy, and he is beginning to take advantage of them to a greater extent than ever before. The agricultural colleges are no longer turning out the bulk of their young men loaded with a merely classical education and starting them off in various professional pursuits. These boys are getting a good, substantial education and are paying attention to practical subjects as applied to agriculture. In other words, there is a marked tendency on the part of the farmer's son of today to get a substantial, practical education that he can apply to his farm work. Throughout this State social conditions on the farm are steadily being made more attractive. The advent of the rural delivery mail service and the consequent access to that greatest of all educators, the daily newspaper, has placed the farmer and his family in touch with what is going on in the world as much so as if he were in his chief city. He knows what is going on around him, he learns of the demands for certain agricultural products, of what his neighbors in the adjoining counties are doing; he gets and reads the practical agricultural bulletins; he is living a broader and more satisfying life.

The rural service has perhaps done more to develop the tendency of the farmer's boy to remain on the farm and seek success than any other influence in a half century. His ideas are no longer confined to the narrow boundaries of his own farm; they have been broadened, and the farmer boy of today sees things with a very different pair of eyes than he did even a few years ago.

FARMERS' INSTITUTES FOR SEASON ENDING JUNE 30, 1906.

Number of meetings...	54
Number of sessions....	74
Total attendance	11,149
Speakers	15
Amount appropriated for year ending June 30, 1906.....	$4,524.40
Amount appropriated for year ending June 30, 1907.....	$5,000.00

Education.—In the last decade or more very much more attention has been paid in South Carolina to agricultural education than for many years preceding. The establishment of Clemson College, the splendid work of which in this regard is detailed fully elsewhere in this volume, has stimulated the young men in the State engaging in agriculture to the employment of better methods looking to larger yields per acre. The State maintains scholarships in this institution and at the institution the full experiment station of the Federal Government, in coöperation with the College, is maintained and well managed. The College, in addition to the education of the young men in scientific agriculture, has been conducting State and county farmers' institutes, and an institute train has been sent on several occasions on a tour over the State, carrying the exhibit of agricultural products and a corps of scientists giving lectures to such farmers as come to the school on wheels. Herewith are shown pictures of this train and of the interior of the exhibit car.

The trustees of Clemson College appropriate between $3,000 and $4,000 a year with which to pay the expenses of the farmers' institute work which the College conducts. A director of institutes, who is paid a salary by the College, and prominent scientific lecturers and practical growers are employed to give instruction to farmers on subjects relating to their profession. The railways of the State have been assisting the institution in its work of education extension, furnishing coaches which the College equips with lecturers and material, the companies transporting them free of cost over their lines. The president reported, January 7, 1907, that two cars were then out on a tour of instruction through the southern half of the State, to be gone for about two months, and that in the summer the same process will be carried on in the upper portion of the State. They are side-tracked as long as the farmers in any particular locality desire information from the officials. It is a school on wheels, and during the year the College devotes from three to four months' steady work to giving this outside instruction.

During the summer vacation from 1,000 to 1,500 farmers assemble annually at the College for the study of agricultural and industrial problems. It is the purpose of the College to enlarge the scope of the farmers' institutes so as to

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reach the entire population of the State, including the mill people, the school children, and all who are interesetd in scientific industrial education.

The State also maintains a State college for negroes, in which the negro youth are trained in practical agriculture, carpentering, and such callings.

Demonstration Work.—Recently, after consultation with the Commissioner of Agriculture, Dr. S. A. Knapp, who is at the head of that branch of agricultural work under the Bureau of Plant Industry known as the Farmers' Coöperative Cotton Demonstration Work, has seen fit to put this work in full operation in South Carolina, and a full corps of special agents, who will conduct the operations, all of which are conducted practically upon existing farms, has also been sent into the State. Nothing in regard to the present agricultural situation in South Carolina, along the line of making two blades of grass grow where one grew before and teaching the farmer farming as a business proposition, promises more excellent results.

Summary of Conditions.—It is particularly noteworthy that the most conspicuous increase on agricultural lines have been in live stock, horses, mules, hogs, etc., while most material increases are shown in the matter of the growing of the cereal crops, the percentages of which may be seen in the condensed tables printed elsewhere. Very many branches of the agricultural industry which have tended to pile up wealth for States not growing the product as well as South Carolina have been sadly neglected, but at this time in various portions of the State efforts upon these lines are beginning to make themselves felt. Some idea of the different lines upon which the chief farming operations are conducted in the State may be gathered from the brief summary showing the number of farms deriving their principal income from the products indicated, which table is found elsewhere.

In this connection the following in regard to the progress in farm management in 1906, by Dr. W. J. Spillman, Agriculturist in charge of Farm Management Investigations of the Bureau of Plant Industry of the United States Department of Agriculture, is particularly applicable to South Carolina:

"Progress in the development and extension of agricultural industries and efforts looking toward the adoption of improved methods of farming have been hampered in all sections of the United States during the past year by a lack of farm labor. The amazing development of transportation and manufacturing industries has absorbed the available labor, and the farmer has been compelled to operate with an insufficient supply. Especially in New England and in the Southern States the labor is dirfting toward the cities. The State of South Carolina has been making efforts to remedy this difficulty by securing immigration. The State of Maryland is taking steps in the same direction. Modification of our immigration laws has been suggested as a means of ameliorating this condition. It is believed that the present interest in agricultural education will lead to the development of schools of a type that will open the door of opportunity on the farm, and thus hold a larger proportion of the rural population, to some extent remedying the difficulty.

*THE ANNUAL CEREAL HARVEST.

	Acreage.		1906.	
	1906.	1907.	Bus.	Value.
Corn	1,935,347	1,974,000	23,611,233	$17,236,200
Wheat	318,284	314,347	2,960,041	3,256,045
Oats	191,259	195,000	3,538,292	2,016,826
Rye	4,015	4,226	34,128	42,660
Barley	2,090	2,098	3,127	3,012
Rice	19,036	19,036	418,792	418,792

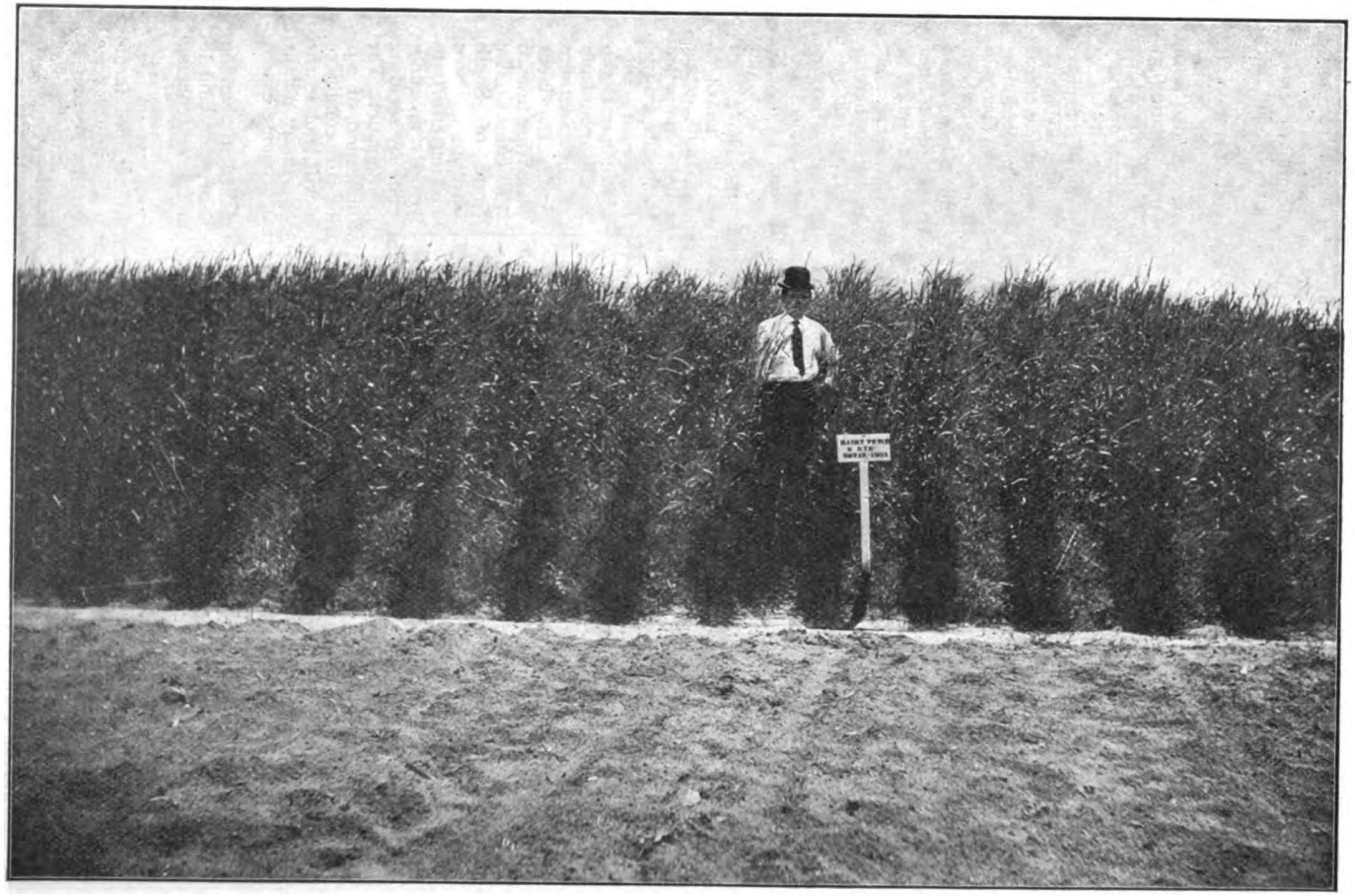
"Because of insufficient labor, many farmers have been compelled to abandon types of farming which require much labor and to seed much of their land to grass, thus reducing the amount of labor needed, but at the same time reducing the income from the land.

"One of the most notable movements in connection with progress in farm management during the past year has been the tendency toward diversified farming in the cotton belt. The primary factor in this movement is the injury done to the cotton crop by the boll weevil. Diversified farming in that section is taking the direction of an increase in trucking and fruit-growing, dairying, hay production, the raising of hogs, and to some extent the production of beef. The development of trucking and fruit interests has been greatly hampered because of difficulties connected with the marketing of perishable farm products. On account of the absence of statistics relating to acreages of such crops, the farmer has no idea of the acreage of any particular crop it is safe for him to plant. Because of lack of organization for marketing such products, he does

NOTE.—See Appendix for data in regard to new work inaugurated in July, 1908, by the U. S. Department.

*See page 585 for 1907 yields and values.

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HAIRY VETCH ON THE COAST.

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not know where to send his material when it is ready for market. The further fact that the producer has no adequate protection against unfair treatment from consignees has discouraged many farmers from engaging in trucking. In some sections icing charges and high freight rates leave no profit to the producer. If these difficulties could be remedied there would undoubtedly be an enormous increase in truck farming throughout the South.

"The present effort to eradicate the cattle tick in the South causes renewed interest in all types of cattle farming. If the effort is successful it will undoubtedly result in a large extension of cattle raising just at a time when range cattle in the West are decreasing rapidly, because of the occupation of range land by settlers on the one hand and the extension of sheep grazing on the other. The elimination of the cattle tick would also doubtless cause a large increase in the dairy industry in the South.

"The increased price of wool for the past few years has caused renewed interest in sheep raising in all sections of the country, and the number of sheep on American farms is increasing.

"The recent demonstration of a cheap and effective method of eradicating Johnson grass will doubtless render it possible for that valuable hay grass to be utilized in crop rotations in the South, somewhat as timothy is now utilized in the North. Taken in connection with the eradication of the cattle tick, which is now in progress, this fact cannot fail to have an important influence on the development of live-stock farming in the cotton belt.

"Alfalfa continues to occupy an important place among those crops which are increasing in area on farms in the eastern half of the United States. Its successful culture is having an important influence in modifying cropping systems and types of farming, and where it has become established it has considerably increased the income from the land."

Size of Farm Reduced.—In 1850 the average sized farm was 541 acres; in the succeeding decade this dropped to 488; in 1870 it had come down to 233, and in 1880 to 143. It is now less than 90 acres, and the tendency is to still smaller and more diversified and better cultivated farms. The trend of agriculture in the State since 1850 can easily be seen from the accompanying comparative tables. Much clearing up of lands was accomplished in the period between 1845 and 1860. The period covering the early portion of the nineteenth century is interestingly reviewed by Mills, whose work is available to those in search of the details of the agricultural development of the State.

Relative Value of Crops.—In South Carolina cotton continues the ranking crop, both in acreage and value, the 1907 acreage being 2,463,000, which, if the average price of 10 cents is obtained, will bring the farmers in over $56,500,000. Corn comes second, with a value of product of about $18,000,000. Then wheat and hay in the order named. The accompanying condensed tables show the present status of the several crops, however, and at a glance the progress of the last five years may be seen.

PERCENTAGE OF INCREASE BETWEEN 1900 AND 1906.

	Acreage.	Production.	Value.
Cotton	5.9%	19%	23%
Corn	9.3%	35%	88%
Wheat	83 %	191%	234%
Oats	14 %*	32%	64%
Rye	5.9%	70%	131%
Potatoes	11 %	14%	132%

*Decrease in acreage.

Striking Improvement.—The most noteworthy evidence of the general improvement made in the methods of agriculture is contained in the percentages of increase between 1900 and 1906. Invariably the percentages of production and value of product have exceeded the percentage of increase of acreage. Note the figures.

The percentage of increases in trucking has been by far the greatest in the agricultural industry.

There was a decrease in all three regards in tobacco, but the year 1907 has brought the record acreage, crop and prices.*

The Value of Farm Products in South Carolina, which was nearly $42,000,000 in 1870, fell greatly during the period of Reconstruction. In 1890 the figures were $51,337,985, and in 1900, $68,266,912. In 1905 the value was $76,721,786, an increase of 10.8%, and in 1906 the value was about $83,000,000, according to figures available. There has been since 1906 an increase of 5.9% in the acreage of cotton, and 9.3% in the acreage of corn, and a much larger percentage of increase in the production of corn is expected, owing to the general utilization

*See page 585.

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of the Williamson method of corn culture, and the stimulation of interest due to the winning of the world's contest, the result of which was announced early in the spring of 1907.

AVERAGE YIELD OF COTTON PER ACRE, IN 500-LB. BALES, ON FARMS OF WHITE AND NEGRO FARMERS AND BY CLASSES OF OPERATORS.

	Bale.
White Farmers:	
Owner	0.462
Cash Tenant	0.416
Share Tenant	0.397
Negro Farmers:	
Owner	0.377
Cash Tenant	0.367
Share Tenant	0.374

The farmers of the State are spending approximately $5,000,000 a year for fertilizers, and considerably over $6,000,000 a year for labor. At last, also, as will appear from the chapter on the live stock industry, the people of the State are paying more attention to the raising of home supplies, and saving thousands upon thousands of dollars they have been since the war spending for such products with Western producers, as well as the freight.

In another chapter complete information is given as to South Carolina's chief agricultural product, cotton, and the new and most important trucking industry is treated.

History.—While this chapter is primarily intended to deal with the present condition of agriculture and to point out the rare opportunities the industry offers for development and the financial success of those who push its development, the



A FIELD OF GOOD CORN.

State's record as an agricultural State is too important to be passed over lightly.

Governor Glenn, in 1749, according to McCrady's History, made a report in regard to the yield of agricultural products in South Carolina: "Indian corn delights," he says, "in high, loose land; it does not agree with clay and is killed with much wet. It is generally planted in ridges made by a plough or hoe, and in holes about six or eight feet from each other. It requires to be kept from weeds, and will produce from fifteen to fifty bushels an acre. Some extraordinarily rich land in good seasons will yield eighty bushels, but the common computation is that a negro will tend six acres, and that each acre will produce from ten to thirty-five bushels; it sells generally for about 10s. currency a bushel."

Governor Glenn's report on rice, made in 1748 and 1749, is interesting even to this day. McCrady says of this report: "Thirty slaves are reckoned a proper number for one plantation, tended by one overseer; these, the Governor says, in favorable season and on good land, produce a surprising quantity of rice. Lest he should be blamed by any induced to come out upon such favorable accounts, and who might not reap so great a harvest, or lest he should mislead their Lordships of the Board of Trade, he chose rather to send the common computation throughout the province, *communibus annis*, which is that each good working hand employed in rice makes four barrels and a half; each barrel weighing five hundred weight net, besides a quantity of provisions of all kinds for all his slaves, horses, cattle, poultry, of the plantation, for the ensuing year. Rice, he reports, last year (1748), as being a medium, about 45s. currency per hundred; and all this year (1749) at 55s., or three pounds, though not many years ago it was sold at such low prices as 10s. and 12s. per hundred."

"The first permanent settlers," says Hammond, "established themselves on the seacoast of South Carolina in 1670. Bringing with them the traditions of a

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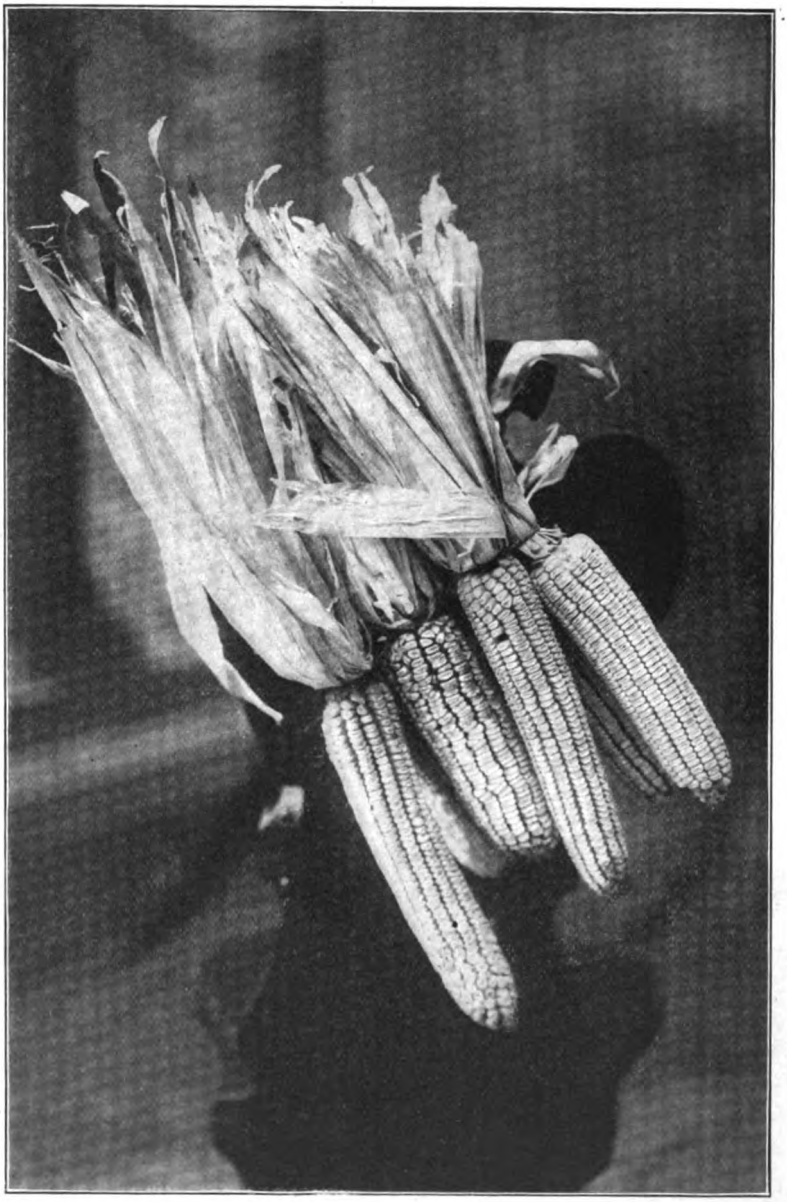


HOW A FAIRFIELD FARMER GOT HIS HAY IN 1906—FROM THE WEST



HOW THE SAME MAN GETS IT IN 1908

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CORN GROWN WITHOUT FERTILIZER

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husbandry that must have been very rude at a period so long ante-dating the Tullian era of culture, and adapted solely to the requirements of colder latitudes, they met with such poor success in the cultivation of European cereals that they soon found it would be more profitable to employ themselves in collecting and exporting the products of the great forests that surrounded them. In return for the necessaries of life, they exported to the mother country and her colonies oranges, tar, turpentine, rosin, masts, potashes, cedar, cypress and pine lumber, walnut timber, staves, shingles, canes, deer and beaver skins, etc. It is interesting to remark, in the accompanying diagram that after being more or less in abeyance during a period of two hundred years, amid the fluctuations of other great staple crops, these forest industries seemed, in 1870, about to assume their ancient supremacy once more. With the settlement of the up-country the culture of small grain became more successful, and when Joseph Kershaw established his large flouring mills near Camden, in 1760, flour of excellent quality was produced in such abundance as to become an article of export of considerable consequence. In 1802 flouring mills had proven so profitable that quite a number were established in the counties of Laurens, Greenville and elsewhere. About that time, however, the attractions of the cotton crop became so great as to divert attention from every other, and the cereals lost ground, until the low prices of cotton prevailing between 1840 and 1850 prepared the way for a greater diversity of agricultural industries, and the small grain crop of 1850 exceeded four million bushels. Since then the cereal crops have declined, and seem likely to do so, unless the promise held out by the recent introduction of the red rust proof oat should be fulfilled and restore them to prominence.

"In 1693, Landgrave Thomas Smith, of whose descendants more than five hundred were living in the State in 1808 (a number doubtless largely increased since), moved perchance by a prophetic sense of the fitness that the father of such a numerous progeny should provide for the support of an extensive population, introduced the culture of rice into South Carolina. The seed came from the Island of Madagascar in a vessel that put into Charleston harbor in distress. This proved a great success, and as early as 1754 the colony, besides supplying an abundance of rice for its own use, exported 104,682 barrels. Great improvements were made in the grain by a careful selection of the seed. Water culture was introduced in 1784 by Gideon Dupont and General Pinckney, rendering its production less dependent on the labor of man or beast than any cultivated crop. In 1778 Mr. Lucas, established on the Santee River the first water power mill ever adapted to cleaning and preparing rice for market—the model to which all subsequent improvements were due—diminishing the cost of this process to a degree incalculable without some standard of reference as to the value of human labor, on which the drudgery of this toil had rested for ages. In 1828, 175,019 tierces were exported, and the crop of 1850 exceeded 250,000 tierces, that of 1860 was something less, and in 1870 the product tumbled headlong to 54,000 tierces."

While the fertility of the soil was understood by DeSoto's party, when the expedition to the Savannah River was made in 1538, it was a century and a third longer that the territory virtually remained a wilderness. The hunter was the pioneer leading the way into the interior, driving the deer and other animals before him and gradually clearing the land, being followed by the Indian trader. As the wild animals were driven inward the domesticated stock brought from Europe by Columbus on his second voyage came up through Florida and began to spread over the country. It is asserted that the last elk was slain by Robert Newton, near Winn's Bridge in Fairfield County. Following the Indian trader soon came the cow driver, or "cracker," as he was termed because of the sound made by his long whip. All this led to the development of a live stock exporting industry from Charleston about 1748. Fine breeds of horses were encouraged and protected by law from the infusion of inferior blood.

Following the cow driver naturally came the farmer, making permanent settlements, and he began with the getting of his seeds from European countries. The beginnings with rice, indigo, cotton, corn, peas and tobacco, as well as silk, are detailed elsewhere. The first notable shipment of cotton from Charleston was made in 1795, consisting of 1,109,653 pounds. During this period the forester began his active operations, and soon pitch and tar were being exported.

Tracing the development of agriculture a few years ago, Maj. Hammond takes the subject here most entertainingly: "Early in the nineteenth century cotton became the leading crop in the Southern States. Starting in 1800 with a crop of 155,000 bales, selling at an average price of 28 cents per pound, the crop increased to 1,000,000 bales in 1826. The price then declined to 9 cents, and for the ensuing six years there was a continuous reduction in the crops, and in the prices, until in 1832 the price fell to 7 cents. The price rose again in 1833 to 18 cents, and by 1840 the crop had increased beyond the 2,000,000 bale mark, and

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EXPERIMENT ON COAST COUNTRY LANDS.

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the price fell again below 9 cents and continued below that figure, reaching its lowest point, 5.62 cents, in 1845. The succeeding short crop falling below 2,000,000 bales, in 1847, was accompanied by a rise in price to 11.21 cents. With the increase in the crops of two succeeding years the price again went down to 7½ cents. Cotton growers became hopeless. They were ignorant of modern commercial methods by which capital may gain considerable profits regardless of the losses by producers. They believed the days of growing cotton profitably had passed and that 8 cents cotton would never be seen again. However, the momentum acquired in half of a century of strenuous effort carried the crop on, and in 1850 a crop of 2,500,000 bales was produced. Contrary to all expectations, this large crop brought an average price of 12.24 cents. Then ensued a period of unparalleled prosperity for agriculture in South Carolina. The price of cotton was maintained for eleven years, averaging during that period 11 1-3 cents. The crop meanwhile increasing until in 1860 it had nearly reached 5,000,000 bales. But the farmers did not forget the severe lessons they had learned during the fluctuations of the preceding decades. They continued to practice the all-round agriculture that had grown up under the stress of low cotton prices. The large corn crop of 1850 was maintained and increased. On the Cowden plantation,



CORN AND COWPEAS.

cleared in 1849-50, there was harvested in 1858, from 600 acres, 37,000 bushels of corn. The yield of wheat was sustained. The hay crop was increased threefold; rice, 47 per cent.; tobacco, 42 per cent. The number of cattle fell off 34 per cent., but in 1860 they numbered 48 per cent. more than in 1900. There was a reduction of 9 per cent. in hogs, but in 1860 they were double the number counted in 1870. Imphee, or African sorghum, was brought to Carolina first, and spread thence throughout the country, displacing Chinese sorghum. Vineyards were trenched and planted and wine in quantity was made, equal to good Rhenish wine, without any addition whatever to the juice of the grape. Extensive peach orchards were set out and shipments of the fruit in carload lots sometimes realized as much as $500 to the acre.

"Nowhere was improvement more marked than among the slaves; their progress in the arts of civilization and the amelioration in their management was very great since the earlier decades of the century. The increasingly higher money valuation placed upon them gives evidence of this. In 1731 negroes sold one with another for $100 round. In 1847 all on a plantation would bring only $300 each. Ten years later they sold, big and little, old and young, at $700 to $1,000. These values are much higher than the generally accepted estimate of the average value of an agricultural laborer between the ages of 10 and 70 years,

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given by Dr. Farr as $695. With their increased market value (pardon the commercial brutality of the expression) came great improvements in their management and in their moral status (see Johnston Pettigrew's report to the South Carolina Legislature in 1858, against reopening the African slave trade).

"Federal taxes were low. State and local taxation was $1.81 per capita and 23 cents per $100. The taxes of Carolina especially favored land owners, and encouraged them to improve their property. The lands were classified and a specific valuation placed on each class; taxes were collected simply on that valuation, without reference to any impr[illegible]ts placed upon them afterwards. Taking it all in all, it is not surprising [illegible]ring this golden decade the value of property rose from $431 per capita to $778; that is, the $288,257,694 true valuation of 1850 became $548,128,754 in 1860.

"Then came the overwhelming catastrophe of the war. In 1870 there remained of the property of 1860 less than 25 per cent. State and local taxes were increased 116 per cent.; on top of this was piled a Federal tax on raw cotton, higher tariff and internal revenue taxes, with heavy and increasing exactions for Federal pensions collected here to be disbursed elsewhere. Seldom has heavier indemnity been required of any people.

"During the widespread devastation of the decade, 1860-70, the production of rice fell from 7,500,000 to 2,000,000 pounds, tobacco was one-third of what it was



COTTON AND COWPEAS.

before, corn one-half, swine one-third, cattle three-fifths, sheep one-half. The cotton crop was reduced one-third, but prices had been high. On the 24th of August, 1864, it sold in New York for $1.89 per pound. In 1866, the year after the war, prices averaged 43 cents. On the 30th of August, 1867, the average price for the season just closed was 31½ cents; by the 27th December of the same year it had fallen to 15¼ cents. In some of the interior towns farmers sold their crop at 9 cents to pay advances and interest. The ensuing spring it had again risen to 33 cents on the 28th of April. On that day it happened by accident that the writer spent twenty minutes in a cotton factor's office and during that time heard the announcement of the sales of three several shipments of cotton to England which netted the factor $80,000—a striking contrast with a loss of $30,000 made that season by the best planter in our section on his cotton crop. What a cotton speculator loses some other speculator gains; there is only a change of title and no reduction of the public wealth, but when a farmer loses on his year of hard work there is so much forever subtracted from the world's values.

"South Carolina had furnished largely of her population to the Western States from Georgia to Texas. She had sustained the credit of her sons to the waters

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of the Mississippi River and beyond with loans from her banks at a time when the notes of the South Carolina State banks were the only notes that passed generally current in the Union and even in the seaports of Europe. Now she was bankrupt. Her heavy battalions of organized labor had been mustered out and disbanded. Her capital was sunk. The land was there, but even the seed for planting was often wanting. The world was starved for cotton. Every acre in cotton could command a loan, and nothing else could. The people borrowed on the cotton acreage, borrowed on the crop before it was planted, for the most, at ruinous rates of usury. Foreign capitalists gathered in this profit and the world profited by the material the crop furnished for manufacture and commerce. Nature has not refused her bounties to Carolina. Without immigration or any outside aid her agriculture has worked its way forward. The crop of 224,000 bales of cotton grown in 1870 has increased to 837,000 in 1900. The corn crop has more than doubled; the wheat crop is larger; the oat crop is more than four-fold what it was; the rice crop has increased 47 per cent.; the hay crop is twenty times as large; 570 pounds of tobacco is made where one was made in 1870.

"From the earliest times it has been seriously questioned by many Carolina farmers whether it was wise to depend in so great a degree upon the cotton crop. It is called 'the money crop,' but communities do not make solid progress and prosperity on money crops."

Gradually Carolina farmers have learned this and are looking more and more to diversity, notwithstanding the invention of the cotton gin, the feeder and condenser, and dozens of other labor-saving farm implements have reduced the



HANDSOME YOUNG COTTON.

cost of production of cotton. Cultivators, harrows, mowers, binders and such machines have immensely aided in the cause of diversification and larger yields per acre, and the progress in this regard would not have been so much retarded had the bulk of the white young men stood by the farms rather than leave them to the inferior race. The manufacture and use of commercial fertilizers have also had a marked influence, particularly since the Civil War, upon agriculture as a whole, leading to a lack of effort to make the land itself produce its maximum as a result of proper, systematic and intelligent handling.

Referring to this period—prior to 1900—Maj. Hammond recently wrote: "Some years after the war it was discovered that extensive deposits on the Carolina coast were rich in phosphate rock, and in 1874 operations were undertaken to mine these deposits and prepare the rock for market to be sold as a fertilizer. Before the war Carolina made little or no use of these commercial fertilizers, they depended entirely on home-made manures, stable manures and cotton seed, either alone or in compost with woods mould and litter. Great attention was paid to their preparation and large manure piles marked all well-managed plantations. The great reduction in the number of cattle during the war, and their still greater reduction after the passage of the fence law in 1877, requiring the enclosure of stock, together with the increasing number of small farmers, with no live stock, led to the substitution of artificial for home-made manures. In this change Carolina has gone beyond any other State, while the farmers of the country at large pay only one dollar out of every eighty-six of the gross value of the products of the farm, those in South Carolina pay one dollar out of every fifteen of gross products." And again he writes: "The lien law, an invention of the Reconstruction carpetbaggers, securing the collection of advances made

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on growing crops, often even before they were planted, and the fence law requiring the enclosure of all live stock, leaving land under crops unenclosed, promoted existing tendencies in agriculture. Removing the cost of fencing on land under crops led to a wide deforestation and careless cultivation."

The Negro in Agriculture.—The negro before the war as a slave was of course the sole agricultural field laborer, and even today he is practically the only laborer available. As indicated by the conditions referred to elsewhere, he is becoming daily less of a day-laborer and more of a tenant and share-cropper. In 28 out of the 41 counties in 1900 there were more negro than white farmers, the negroes forming a majority of the farmers in two-thirds of the counties. The actual negro owners of small farms in South Carolina numbered 18,970. Nearly all of the negro-owned farms, however, are along the coast, where many negroes secured farms as a result of the Civil War and subsequent conditions. In the above classification, however, it is important to note that many negroes who are scarcely more than laborers, under the system of tenant farming prevailing, must be classed as "farmers."

The negro population in the decade from 1890 to 1900 increased 93,387, while the white population increased 95,799. The State's population was 58.4% negro and 41.6% white. The bulk of this black population was under 20 years of age, and the majority illiterate. Engaged in agricultural pursuits there were, in 1900, 173,278 negroes, male, 95,352 being field laborers, and 94,048 female, 85,002 being



IN THE CORN FIELD.

laborers. More than 9,000 of the latter were classed as "farmers, planters and overseers," against 75,752 of the same class for negro males. The tendency that has prevailed to turn the farms over to negro tenants is thus seen at a glance. Charleston, Orangeburg, Sumter, Beaufort, Georgetown, Richland, Clarendon, Colleton and Barnwell are the counties most thickly populated with negroes, though the percentage in several of these is no larger than in some others. South Carolina's total rural population is 1,169,060 (1900), and of this, 697,963 persons are negroes—a percentage of 59.7. The percentage of the negro population living in the country districts is 89.2 (1900). It is much less in 1907, causing a constant demand for farm labor. Negroes were "operating"—that is, as owners, tenants, renters or croppers—in 1900, 85,361 farms in the State, representing an acreage of 3,791,510, with 60% of it improved, the value of the property being $43,992,879, yielding a total of $26,586,962 in agricultural products. Of this number of farms, 15,503 were operated by their owners and 66,231 by tenants, of which 23,806 were share-croppers, the others being cash tenants. The vast majority of these farms were between 10 and 50 acres. The vast majority also showed value of product between $50 and $500 per annum. Nearly 70,000 of these farms were devoted almost exclusively to cotton. The domestic animals of all descriptions on these farms, including $1,555,386 worth furnished to share-croppers, were only valued at $6,135,820.

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The above figures show that under the system that has grown up between the Civil War and 1900, 55% of the farms are being operated by negroes; that they operate 27.1% of the total farm acreage and 39.4% of the improved farm acreage, and their operations cover 28.6% of the value of all the farm property in the State; that they raise 38.9% of the farm products, and represent 33.5% of the expenditure for fertilizers.

Farms in South Carolina Operated by—	Number.
Owners	60,471
Cash tenants	57,046
Share tenants	37,838
Total farms	155,355

In this connection the general statement of farms by specified tenure in 1900 is of interest. Of all the farms in the State, 72.6% derived their principal source of income in 1900 from cotton; 6.1% from hay and grain, and only 2.2% from live stock, these being the largest percentages. South Carolina farmers expend $29 per acre for fertilizers, the average for the whole United States being $9, this bill in a number of the States with soil not so fertile naturally ranging from only $1 to $4 per acre. South Carolina's acreage in all crops in 1900 was 4,751,385.

The conditions indicated by the above statistical information are already being ameliorated by the enlightened work referred to earlier in this chapter.



A COAST COUNTRY FARMER'S HOME.

AGRICULTURAL SECTIONS.

No better division of the State into physical and agricultural regions could be prepared than that made by Hammond in the early 80's. In addition to the two grand divisions of South Carolina into the "up-country" and "low-country," it facilitates the consideration of the agricultural characteristics of the State to treat of them under certain minor natural and parallel subdivisions, which are quite well marked. These are as follows:

I. *The Coast Region.*—It coincides very nearly with the post-pliocene formation, rarely extending inland more than ten miles from the shore line. It consists—

1st. Of the sea islands lying south of Santee River, and containing about eight hundred square miles, where sea island cotton and tropical fruits flourish.

2d. The salt marshes, uncovered at low tide, bordering and intercalating with the sea islands, capable of being reclaimed, and embracing six hundred square miles.

3d. The continuous shore line north of Santee River and Georgetown entrance, three hundred square miles in extent.

II. *The Lower Pine Belt, or Savannah Region,* lying inland and parallel with the Coast Region. It has a width of about fifty miles, attains a maximum elevation above the sea of one hundred and thirty feet. It may be divided—

1st. Into the region below the influence of the tides, the rice fields of South Carolina.

2d. The region above tide water, notable for its turpentine farms and its cattle ranges. Fruits of all kind thrive.

III. *The Upper Pine Belt, or the Central Cotton Belt,* having a width of twenty to forty miles. It is covered with a growth of long leaf pine, mixed with oak and hickory. The soil consists of a light sandy loam underlaid by red and yellow clays. It has an elevation above the sea from one hundred and thirty

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to two hundred and fifty feet. Large inland swamps, bays and river bottoms of unsurpassed fertility, covering five thousand five hundred square miles, are interspersed among the two regions last named. All crops grown successfully.

IV. *The Red Hills* are immediately north of the last region. They have an elevation of three hundred to six hundred feet above the sea. The soil is red clay and sand, and there is a heavy growth of oak and hickory. They embrace the range of hills extending from Aiken County through Orangeburg to Sumter, where they are known as the High Hills of Santee, and also the ridge lands of Edgefield and Saluda, famous for their fertility. Cotton, corn, oats, wheat and legumes flourish, as do fruits.

V. *The Sand Hill Region.*—A remarkable chain of sand hills, attaining an elevation above the sea of six hundred to seven hundred feet, and extending across the State from Aiken to Chesterfield Counties. Exceptionally good for fruits.



AN EXHIBIT OF GRAINS.

VI. *The Piedmont Region* includes that portion of the State known as the upper country. It has a mean elevation above the sea level of four hundred to eight hundred feet. Exceptionally well suited to every kind of agriculture and horticulture. Its soils are—

1st. The cold gray lands overlying for the most part the clay slates.

2d. The gray sandy soils from the decomposition of granite and gneiss.

3d. The red hornblende lands.

4th. The trappean soils, known as flat woods meadow or black-jack lands in various sections.

VII. *The Alpine Region* is the extreme northwestern extension of the rocks and soils of the region just mentioned, differing from the former by its more broken and mountainous character, and by its greater elevation, ranging from nine hundred feet to three thousand four hundred and thirty feet at Mount Pinnacle, near Pickens Court House, the highest point in the State—3,430 feet.

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Chief Characteristics.

In the Coast Region the length of the coast line is 190 miles, S. W. to N. E. There are numerous islands and inlets south of Winyah Bay. There is a smooth, hard beach on the north. Strata of sand, clay and mud 60 feet. Growth of palmetto and live oak. The soil is a fine sandy loam, with a subsoil of fine textured yellow sand or clay; at places it has a red color. A few salt marshes have been reclaimed, and are of great fertility. Agricultural products: truck and sea island cotton, marsh and other hay, oats and corn, olives, oranges, figs, grapes, indigo, rice and hemp.

In the Lower Pine Belt, next to the Coast Region, there are eight rivers navigable for short distances, aggregating about 1,000 miles. The country is generally flat, but there are numerous elevations amounting to hills of from 100 to 250 feet in elevation. The average slope is 3½ feet to the mile, hence numerous swamps and marshes. Drainage is difficult except by skillful engineering and under an extensive and comprehensive system. Individual effort is hardly adequate for the magnitude of the undertaking. In a general system large and exceedingly fertile lands could be brought under cultivation. The low-lying land is very well suited for irrigation, as the water supply is abundant, but pumping plants would be necessary rather than irrigating dams. The region has underlying it mostly cretaceous rocks of secondary formation. The area is 10,226 square miles. There are also phosphate rocks. Four leading varieties of soil are noted: 1st. A sandy loam with white sandy subsoil; 2. Sandy loam with yellow subsoil; 3. Sandy loam with yellow or red clay subsoil; 4th. Clay lands with clay subsoil. Forest growth: long leaf pine, scrub oak and new Coast Region live oak, tulip, sweet and black gum, cypress in low lands, on higher lands white oak, black walnut, hickory and elm. Agricultural products: Rice, confined largely to



WATERMELONS.

portion adjoining Coast Region, although capable of being extended to cover a much larger portion of the region, especially the central and southern parts. A large portion of the southern part is not under cultivation, owing to the difficulty of draining the lands. The western and northern parts are mostly under cultivation.

The Upper Pine Belt.—Between the Lower Pine Belt and the Sand Hills, from Savannah River to the North Carolina border, with an elevation of from 130 to 250 feet, are the counties of Barnwell, Bamberg, Orangeburg, Clarendon, Sumter, Darlington, Florence, Marion and Marlboro, and parts of Colleton, Hampton, Aiken, Richland, Kershaw and Lee. The surface is level, but rolling, with good drainage. The average slope is about five feet to the mile, being greater along the western and northwestern border. The area is 61,000 square miles, one-sixth of which is swamp. The soil is generally fine, light gray, sandy loam, with red or yellow clay subsoil, and fertile. The swamps have heavy alluvial loam.

The black soil is largely composed of decomposed vegetable matter. The woods are yellow pine, oak, hickory, the gums and cypress, ash, beech, elm, black walnut, dogwood, hickory, black-jack oak, with many other varieties. Agricultural products: Yield best in the State. Actually raised in 1899: Wheat, 7 to 43 bushels per square mile; oats, 86 to 250 bushels per square mile; corn, 648 to 1,055 bushels per square mile (greatest in State in Bamberg County); cotton, 41 to 75 bales per square mile. Minor crops: Sugar cane, peanuts, melons (commercial), legumes. Fruits: Peaches, plums, cherries, apricots, pears, few apples, and cherries. Gardens flourish. The average population is about 60 per square mile.

The Red Hill Region is irregular in outline, not continuous, and has high hills. It is between the Upper Pine Belt and Sand Hill Region. It begins at

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the Savannah River near Augusta, includes the parts of the "Ridge Section," attains its greatest width near Fort Motte, and has its northern terminus in the "High Hills of Santee" in the western part of Sumter County. The soil is reddish loam, and, because hard in dry weather, it is of easy tillage under certain conditions, but when not in condition is difficult of tillage; responds quickly and favorably to vegetable manures, but is of low fertility naturally. The forest growth consists of short leaf pine, hickory, red oak of enormous size, chestnut and pecan nut. Agricultural: Marked shading in production; grain in the Upper Pine Belt, but nearly all the crops are cultivated. Owing to lack of natural fertility and need of scientific tillage, these lands are of low productive capacity under present occupancy, but are capable of great improvement. The area is 1,620 square miles.

The Sand Hill Region stretches across the State from the Savannah River, opposite Augusta, to the North Carolina line, where it intersects the Great Pee Dee River; it includes the parts or the whole of Aiken, Edgefield, Lexington, Richland, Kershaw, Lancaster and Chesterfield Counties. Its greatest width is about 30 miles in Lexington County. It is cut into by the Upper Pine Belt, touching the Piedmont rocks in Richland County. These hills reach an elevation of about 600 feet in Aiken County and a maximum elevation of between 700 and 800 feet in Lexington County. In Chesterfield County there are conical



A FARM LAKE.

hills that bear evidence of the surrounding lands having suffered denudation of from 100 to 150 feet. The long slopes of the Sand Hills face west and south, the short slopes north and east. The streams that originate in the "up-country" here have abrupt descents into the "low-country," and in many instances furnish considerable water power. Soil: Loose, rounded sands, very unproductive, but river bottoms are as a rule fertile, and elevated flats can be brought to a high state of fertility by proper methods of farming. There are large areas that have clay subsoils. The area is about 2,000 square miles. Forest growth: Long leaf pine, some varieties of black-jack. This is the healthiest portion of the State. Agricultural products: Superior for peanuts, sweet potatoes, sorghum, watermelons and the staples, oats, cotton, corn and some wheat. Distinctly less fertile than the Upper Pine Belt on the south and east and the Piedmont Region on the north and west. Fruits: Peaches, apricots and plums; grapes, especially scuppernong.

The Piedmont Region includes the whole of the counties of Abbeville, Anderson, Newberry, Laurens, Union, Fairfield, Chester and Lancaster, York, Saluda, and the northern parts of Aiken, Edgefield and Richland, as well as the southern parts of Oconee, Pickens, Greenville, Spartanburg and Cherokee Counties. The elevation varies from 119 at Columbia to about 1,000 feet, from which elevation the Alpine Region begins. The face of the country is undulating, with a rapid upward slope northwestward. The streams have worn deep beds by erosion, and are bordered by narrow, very fertile valleys, subject to inundation at times of freshets. There are numerous rapids that can be, and many have been, utilized for furnishing cheap water powers. Soils: Granitic, clay slates, trappean. This

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region is very healthy. Forest trees: Oak, hickory, chestnut, short leaf pine; on streams, willow, beech, birch, black walnut, ash, poplar, gum, sycamore; raises sugar maple and sugar trees, a distinct variety of the maple, very rare. Agricultural: 1899—wheat, 24 to 156 bushels per square mile; oats, 39 to 374 bushels per square mile (heaviest in State in Saluda); corn, 411 to 898 bushels per square mile; cotton, 30 to 55 bales per square mile. The second best cotton lands are found in Anderson and Laurens Counties. Legumes: Cotton does well; apples, cherries, pears and peaches all minor crop; grapes and berries.

The Alpine Region occupies the extreme northwestern border of the State. It is a rolling, hilly, broken table-land, but, with the exception of small scattered areas, capable of tillage. Elevation, 1,000 to over 3,000 feet, reaching a maximum elevation of 3,436 at summit of Mt. Pinnacle in Pickens County. Beautiful scenery; healthy. Soil: Generally decomposed gneiss and some sand and clay. Forest growth: Oak, chestnut, short leaf pine, hardwoods. Agricultural productions similar to Piedmont and only slightly less productive. Grasses predominate. Fruits same as Piedmont.



A FIELD OF COWPEAS.

In any of these regions, save in the portions of the Coast Region, where drainage is needed so badly, and which, when reclaimed, will indeed be the garden country of all America, the possibilities for agricultural development are good. Some of the coast sections are today, without drainage, not only perfectly healthy for people of all climes—notably the sea islands and the Beaufort and Horry trucking districts. It is a just claim when the assertion is made that South Carolina affords opportunity for every variety of agriculture.

COTTON.

It is almost needless to refer to this crop again after what has been said, and in view of the complete information and details given in a separate section of this chapter. This brief reference is made merely to call attention to the fact that there is no county in the State in which cotton is not most successfully grown.

CORN.

The second ranking crop in the State, which is now utilizing 1,974,000 acres, is worthy of consideration. The wonderful records that have been made in South Carolina with corn, capturing world's prizes on yields, are treated separately. The marked headway made in the last few years marks this as a crop

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soon to rival cotton, and perhaps South Carolina is destined to take a prominent position among the corn-producing States of the Union for export purposes. The statistics of corn in this State since 1880 are given herewith, and the steady and substantial increase in the average value per acre of the product speak well for the future development of the industry.

CORN.

Year.	Acreage.	Production, bushels.	Value.	Av. Val. per acre
1907	1,974,000	29,807,000	$23,249,000	$11.70
1906	1,935,347	23,611,233	17,236,200	8.91
1905	1,878,978	20,480,860	15,155,836	8.07
1904	1,789,503	22,189,837	15,532,886	8.68
1903	1,807,579	18,618,064	12,846,464	7.11
1902	1,825,837	18,988,705	13,102,206	7.18
1900	1,772,057	17,429,610	9,149,808	4.48
1880	.....	11,767,099	.....	5.80

WHEAT.

Year.	Acreage.	Production, bushels.	Value.	Av. Val. per acre
1907	314,347	2,669,000	$3,203,000	$10.18
1906	318,284	2,960,041	3,256,045	10.23
1905	318,419	1,942,355	2,156,015	6.77
1904	279,926	2,267,401	2,856,925	10.21
1903	270,261	1,756,696	1,774,263	6.56
1902	267,673	1,498,969	1,528,948	5.71
1900	174,245	1,017,319	958,158	9.09
1880	.....	962,358	.....	8.62

Wheat growing has been gradually increasing in South Carolina until now about three million bushels are being produced. The story of the development of the industry is told in the accompanying table, and in what is said in this volume of the flouring mills of the State. At one time the average value per acre fell so low that there was necessarily an abandonment of wheat growing, but prices are now better, and there is a noteworthy supply of wheat being raised in the State.

OATS.

	Acreage.	Production, bushels.	Value.	Av. Val. per acre
1907	195,000	3,900,000	$2,808,000	$14.40
1906	191,259	3,538,292	2,016,826	10.54
1905	187,509	3,056,397	1,681,018	8.96
1904	191,336	3,271,846	1,963,108	10.26
1903	203,549	2,849,686	1,681,315	8.26
1902	216,541	2,836,687	1,673,645	7.73
1900	222,544	2,661,670	1,226,575	7.44
1880	.....	2,715,505	.....	9.80

The fourth largest crop in the State is oats, and the growing of this crop is general through South Carolina. The condition and development of this crop, as shown by the figures, is most substantial, from the standpoint of value and production, regardless of acreage. The story of the crop is told in the accompanying figures.

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RYE.

Year.	Acreage.	Production, bushels.	Value.	Av. Val. per acre
1907	4,226	38,000	$48,000	$11.35
1906	4,015	34,128	42,660	10.63
1905	4,226	34,231	40,735	9.64
1904	4,226	31,695	39,936	9.45
1905	4,269	32,444	34,715	8.13
1902	4,227	32,125	36,301	8.59
1900	4,256	19,372	18,405	7.87
1880	.....	27,049	.....	8.55

This is not yet a well developed crop in South Carolina, it being principally sown for winter pasturage. For this reason the figures herewith scarcely show the real acreage planted in this cereal. The figures, however, show a steady growth in value.



A MODEL BARN.

HAY.

Year.	Acreage.	Production. tons.	Value.	Av. Val. per acre
1907	60,682	92,000	$1,518,000	$25.01
1906	60,682	88,596	1,351,089	22.27
1905	59,492	84,479	1,128,639	18.97
1904	60,706	92,880	1,131,278	18.64
1903	61,319	89,526	1,049,245	17.11
1902	61,938	75,564	850,095	13.72
1900	145,798	192,453	2,213,210	15.18
1880	.....	.....	.....	16.03

South Carolina produces as good a quality of hay as is to be found in this country, as is shown by the figures as to value, and the development of the industry is creditable. The chief hay-producing sections are the river bottoms and the lands of the Piedmont and Alpine Regions. There is a manifest disposition to go more extensively into hay raising, and another year is certain to witness a material increase.

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IRISH POTATOES.

Year.	Acreage.	Production, bushels.	Value.	Av. Val. per acre
1907	9,065	630,000	$693,000	$76.40
1906	9,065	743,330	780,496	86.10
1905	9,250	767,750	790,782	85.49
1904	8,726	767,888	775,567	88.88
1903	8,555	692,955	720,673	84.24
1902	8,470	584,430	561,053	66.24
1900	8,068	651,916	335,946	78.
1880	.....	144,942	.....	77.

Showing a marked increase in value is the Irish potato crop. The acreage is not as yet very large, but the increases in production and value are indicative of a rapid and substantial development of the growing of Irish potatoes for the market.



SOME HIGH CORN.

COWPEAS.

The cowpea is grown generally throughout the State of South Carolina and is used for hay and for the renovation of soils. It is somewhat difficult to attempt to give the statistics, for practically all of the crop is consumed upon the farm. The cowpea is unquestionably the best summer legume for the South. It is perfectly adapted to South Carolina soils and climate. The cultivation of the cowpea in America dates back to the early part of the eighteenth century. According to certain authorities, a South Carolina planter received a small quantity of seed from a captain of a trading vessel from India. From this small and obscure beginning the cowpea has spread throughout the South. The most important of the varieties is the "Iron," and there are ninety-one so-called varieties growing in this State. Almost any kind of land will grow cowpeas. When the crop is grown for hay, the usual rule is the richer the land the larger the crop. The chief use for the cowpea in this State is for the purpose of soil improvement and for hay. The yield of hay varies from one-half to three tons of cured hay per acre.

The other forage crops are referred to in the chapter on live stock.

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YIELD PER ACRE.

The following table, showing average yield per acre of the various crops other than cotton, will prove interesting and valuable to the home-seeking farmer; they should be taken, however, as average yields, including the productions of careless negro tenant farmers:

AVERAGE YIELD PER ACRE.

	Corn. bu.	Oats. bu.	Wheat. bu.	Rye. bu.	Potatoes. bu.	Hay. tons.	Tobacco. lbs.	Rice. bu.
1897	9.	15.5	8.7	6.6	65	10.00	...	..
1898	10.	17.2	10.6	8.5	65	1.60	...	..
1899	9.	12.0	6.5	5.	56	1.22	...	..
1900	7.	15.5	9.	7.5	78	1.32	873	..
1901	6.9	15.8	8.8	7.7	70	1.46	768	..
1902	10.4	13.1	5.6	7.6	69	1.22	734	..
1903	10.3	14.	6.5	7.6	81	1.46	610	..
1904	12.4	17.1	8.1	7.5	88	1.53	703	25
1905	10.9	16.3	6.1	8.1	83	1.42	736	26
1906	12.2	18.5	9.3	8.5	82	1.46	670	22
1907	15.1	20.0	8.5	...	70	....	900	..



A GERMAN SETTLER'S FARM HOME.

AGRICULTURAL STATISTICS.

The following statistics are of interest:

VALUE OF FARM PROPERTY.

Year Census.	Value of: Farm land with improvements, including buildings.	Implements and machinery.	Live stock.	All farm property.
1880	$68,679,482	$3,202,710	$12,199,510	$84,079,702
1890	99,104,600	4,172,262	16,572,410	119,849,272
1900	126,761,530	6,629,770	20,199,859	153,591,159
1906	.....	.....	26,765,732	170,462,102

NUMBER AND ACREAGE OF FARMS IN SOUTH CAROLINA.

Year Census.	No. of Farms.	No. of Acres in Farms. Improved.	Unimproved.	Total.	Avg. No. of acres to a farm.	Per ct. of farm land improved
1880	93,864	4,132,050	9,325,563	13,457,613	143.4	30.7
1890	115,008	5,255,237	7,929,415	13,184,652	114.6	39.9
1900	155,355	5,775,741	8,209,273	13,985,014	90.0	41.3

The figures for later years are not available.

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AVERAGE VALUE PER ACRE CROPS.

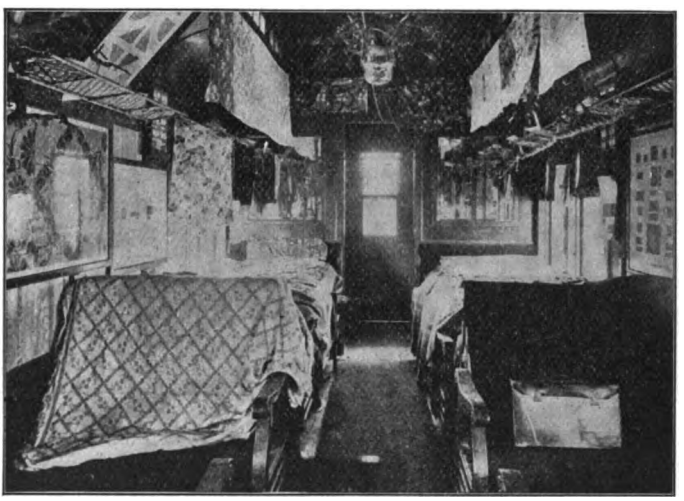
	1904. U. S.	1904. S. C.
Wheat	$12.40	$10.21
Corn	11.79	8.68
Oats	10.50	10.26
Rye	10.46	9.45
Potatoes	49.96	88.88
Hay	13.23	18.64
Tobacco	66.20	57.65

SOIL SURVEY.

1907.	(in sq. mi.)
Abbeville Area	1,006
Campobello Area	515
Charleston Area	352
Cherokee County	361
Darlington Area	599
Lancaster County	486
Orangeburg Area	709
York County	669
Total	4,697

Other agricultural statistics are given on separate pages and in other places, and the particular attention of the student of agricultural development is directed to them.

Soil Survey.—Of very great value to the agricultural industry of South Carolina has been the work of the United States Soil Survey. In the State's agricultural



INTERIOR FARMERS' INSTITUTE TRAIN.

development, accurate and detailed knowledge of the soil, its characteristics, varieties, capabilities and adaptations, is of supreme importance. The soil survey has done excellent work in South Carolina, and this work will be prosecuted until the entire State has been surveyed. At present no such intensity of cultivation is demanded as in Germany, where the average farm comprises 19 acres, or in France, where it is 34 acres, but the time may come, and no doubt will, when the population of South Carolina may be five times what it is today and the farm land must be handled more intensively and more effectively. From the viewpoint of the increase of population, the value of such survey as the Federal Government is now making cannot be overestimated.

Agricultural Education and Good Roads.—A strong contributor to the general agricultural development of the past decade in South Carolina has been the introduction of good roads, coupled with the establishment of the rural mail delivery system. These two things have been a strong factor in the agricultural growth of the State, and as the building of good roads is now an established function of the Government, still greater good will be credited to them in the next few years.

Agricultural Societies and Clubs.—Throughout the agricultural history of the State agricultural societies and associations have wrought a marked influence upon the course of the development of the industry. One of the very oldest—

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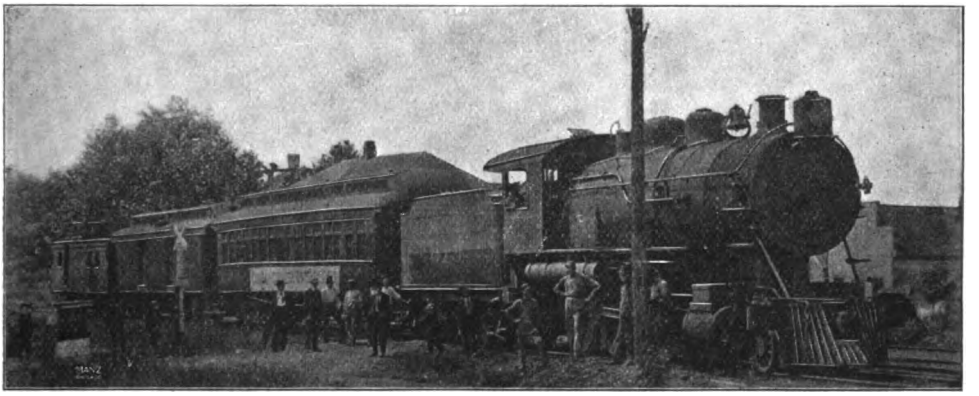
as far as the records go, the oldest—of these societies is the Winyah Indigo Society, in Georgetown, founded in 1757, charitable education being its chief feature. This society grew from a social club formed about the year 1740 by the planters of the Georgetown District. This organization exists today.

The first purely agricultural society, perhaps, was the South Carolina Agricultural Society, composed of planters in and around Charleston, which has had a continuous existence since August 5, 1785. This organization is believed to be the first agricultural society organized in America.

On June 16, 1818, there was organized at Columbia, the capital, a State society called "The South Carolina Agricultural Society"—W. R. Davie, president; Francis K. Huger, John Taylor, John J. Chappell and Wade Hampton, vice-presidents; Edward Fisher and D. J. McCord, secretaries. This society was short-lived, but published some valuable agricultural papers during its existence.

In 1826 another effort was made to organize a State society. It was called "The United Agricultural Society of South Carolina," and was constituted of delegates from the several agricultural societies of the State, many of which are now in active operation. In 1828, W. B. Seabrook was president; he was succeeded by Thos. Pinckney, and the last meeting was held in 1831, after which it ceased to exist.

In November, 1839, there was again organized another State Agricultural Society at Columbia. Patrick Noble was president; W. B. Seabrook, Whitfield Brooks, W. K. Clawney, James Gregg and B. F. Dunkin, vice-presidents, and George McDuffie, anniversary orator. This society was in existence until 1845. During this time it published some very valuable papers, notably Chancellor



FARMERS' INSTITUTE TRAIN.

Harper's essay on slavery, Hammond on marl, and Seabrook's memoir on the cotton plant. These efforts at a State organization of the agricultural interests had other results. Their influence upon the Legislature caused a geological and agricultural survey of the State to be made and induced the establishment of more than one journal devoted to agriculture, which in their day accomplished good. Among these were the *Southern Agriculturist,* edited by J. D. Legare and B. R. Carroll, published at Charleston; *The Carolina Planter,* edited by R. W. Gibbes, published at Columbia; *The Farmer and Planter,* published by Seaborn & Gillman, of Pendleton, and *The Southern Agriculturist,* edited by A. G. and William Summer, of Pomaria, and published at Laurens.

On the 8th of August, 1855, an agricultural convention met in Columbia, and resulted in the organization of the society of which the present South Carolina Agricultural Society is the successor. A. P. Calhoun was elected president; A. G. Summer, secretary. Mr. Summer was afterwards succeeded by R. J. Gage as secretary, but Mr. Calhoun served by reëlection as president until the outbreak of the Civil War. The Legislature aided the society by an appropriation of $5,000. It was handsomely endowed by the city of Columbia with grounds and buildings, and it had a considerable fund derived from payment for life membership. The annual fairs and stock shows of this society were large, well attended and produced a marked improvement in the live stock of the State. Its transactions were published first in *The South Carolina Agricul-*

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turist, then in *The Farmer and Planter*, and for 1858 and 1859 were compiled in a volume and published by the secretary.

The Civil War suspended the operation of this society. Its buildings were destroyed in the burning of Columbia, and its investments became worthless from the results of the war.

In 1868 the society was reorganized with Johnson Hagood, president, and D. Wyatt Aiken, secretary. The city of Columbia reconstructed the buildings in part, and a fund was raised from sale of life membership with which to renew the operations of the society. The society has been without other resources than these until 1878. The Legislature then appropriated $2,500 annually in its aid until 1890, and still makes annual appropriations.

Another society still existing is the famous old Pendleton Farmers' Club, in the Piedmont section of the State. In 1844 the "A B C Farmers' Club" was organized near Silver Bluff, being an association of farmers for the suppressing illicit traffic with slaves. In 1855 this society suspended its meetings and from it grew the Beech Island Farmers' Club, one of the oldest surviving agricultural societies of the State. It numbered among its members Gov. Hammond, Jonathan Miller, H. L. Mason and other well known men of that section. This club still holds regular meetings and discusses agricultural subjects. At one time it attempted the introduction of white labor.



IN A COUNTRY FARMYARD.

An old sketch of this club says:

"On the 24th day of January, 1846, the Beech Island Farmers' Club, of Aiken County, was organized at Matlock Church, (then) Barnwell District, and was known as the 'A B C Farmers' Club.' A chairman for the day is appointed by the members present. On the last meeting for the year (first Saturday in December) the secretary, corresponding secretary and treasurer are elected for the ensuing year, and twelve stewards, whose particular duty consists in preparing a bountiful club dinner, in which they never fail.

"The club has a neat debating room and dining hall and three acres of land, two of which at the last meeting were presented to the club by E. S. Hammond, Esq. Application for a charter was made a few days since. There are 38 regular members of the club and five 'honorary.' The meetings are generally very fully attended, but, like most associations of the kind, there are times of gloom and despondency as well as of cheer and prosperity. The good resulting from the organization of clubs in this neighborhood is beyond question, not only in an agricultural point of view, but socially. An idea may be formed of the interest manifested by the farmers and citizens from one simple fact, that they have maintained it in full force and vigor for 36 years. Even during the war, when every form of organized society had to yield to its arbitrary demand, the meetings were suspended for only three months. The club is on a firm financial basis and employs its surplus cash in improving its property. Distinguished gentlemen from all sections who have visited the club, both before and since the war, have expressed themselves as highly pleased, especially with, as they term it, the admirable constitution of the club, and did not hesitate to attribute much of its success to that instrument."

A real factor for good in the agricultural history of the State has been, and is at this time, this society, which has since 1868 held annual State fairs in the city of Columbia in the fall of the year, at which fairs the agricultural and live stock products of the State are displayed and the people of the State annually gather to meet and mingle with each other, exchanging ideas and keeping alive friendships.

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GENERAL STATISTICS OF AGRICULTURAL PRODUCTION FOR THE UNITED STATES AND SOUTH CAROLINA.—PERCENTAGE OF INCREASE OR DECREASE.

		1907.	1906.	1880.	1870.	1860.	1850.	1906.	1880.	1870.	1860.
Wool, pounds	U. S.	.....	298,915,130	155,681,751	100,102,387	60,264,913	52,516,950	92	55	64	14
	S. C.	.....	200,000	272,758	156,314	427,102	487,233	*26	74	*61	*10
Cotton, bales	U. S.	11,325,882	13,273,809	5,755,359	3,011,996	5,387,052	2,469,003	130	91	*78	117
	S. C.	1,186,672	931,726*	522,548	224,500	353,412	300,901	78	132	*36	17
Corn, bushels	U. S.	.....	2,927,416,091	1,754,591,676	760,944,449	838,792,742	592,071,104	66	130	*9	41
	S. C.	29,807,000	23,611,233	11,767,099	7,614,207	15,065,606	16,271,454	100	54	*95	*7
Rice, pounds	U. S.	.....	7,854,768	110,131,373	73,635,021	187,167,032	215,313,497	*83	49	*60	*13
	S. C.	.....	418,792	52,077,515	32,304,825	119,100,528	150,930,613	*99	61	*72	*25
Wheat, bushels	U. S.	.....	735,260,970	459,483,137	287,745,626	173,104,924	100,485,944	60	59	66	73
	S. C.	2,660,000	2,960,041	962,358	783,610	1,285,631	1,066,277	207	22	*39	20
Oats, bushels	U. S.	.....	964,904,522	407,858,999	282,107,157	172,643,185	146,584,179	134	41	*63	17
	S. C.	3,900,000	3,538,292	2,715,505	613,593	936,674	2,322,155	30	342	*86	*59
Barley, bushels	U. S.	.....	178,916,484	43,997,495	29,761,305	15,825,808	5,167,015	307	47	88	206
	S. C.	.....	22,380	16,257	4,752	11,490	4,583	37	242	*58	150
Rye, bushels	U. S.	.....	33,374,833	19,831,595	16,918,795	21,101,380	14,188,813	68	17	*19	32
	S. C.	38,000	34,128	27,049	36,165	89,091	43,790	26	*25	*59	108
Irish potatoes, bushels	U. S.	.....	308,038,382	169,458,539	143,337,473	111,148,867	65,797,896	81	18	28	68
	S. C.	630,000	743,330	144,942	83,252	226,735	136,494	412	74	*63	67
Sweet potatoes, bushels	U. S.	.....	.....	33,378,693	21,709,824	42,095,026	38,268,148	.....	53	*48	10
	S. C.	.....	3,500,000	2,189,622	1,342,165	4,115,688	4,337,469	59	63	*67	*5

NOTE.—In the columns showing percentage of increase and decrease, decrease is indicated by (*). In comparing the values of 1880 with 1870, it is to be remembered that the premium of gold for the latter was 25.3 per cent. *Running bales.

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	Acres.			Increase per cent. 1900 to 1906.	Product.			Per cent. increase 1900 to 1906.	Value.			Per cent. increase 1900 to 1906.
	1900.	1905.	1906.		1900.	1905.	1906.		1900.	1905.	1906.	
Cotton, bales	2,195,252	2,161,923	2,323,000	5.9	780,782	1,129,426	931,726	19	$34,563,553	$56,984,989	$42,579,831	23
Corn, bushels	1,772,057	1,878,978	1,935,347	9.3	17,429,610	20,480,860	23,611,233	35	9,149,808	15,155,836	17,236,200	88
Wheat, bushels	174,245	318,429	318,284	83.	1,017,319	1,942,355	2,960,041	191	958,158	2,156,015	3,256,045	234
Oats, bushels	222,544	187,509	191,259	14*	2,661,670	3,056,397	3,538,292	32	1,226,575	1,681,018	2,016,826	64
Hay, tons	145,798	59,492	60,682	53*	192,453	84,479	88,596	*53	2,213,210	1,128,639	1,351,089	*34
Rye, bushels	4,256	4,226	4,015	5.9	19,372	34,231	34,128	70	18,405	40,735	42,660	131
Barley, bushels	281				3,106				2,899			
Rice, bushels (lbs. 1,000)	77,657	18,114	19,036	75*	47,360,128	470,964	*418,792	*98	1,366,528	499,222	418,792	*69
Tobacco, pounds	26,567	12,574	13,400	48*	23,203,003	9,254,464	8,978,000	61	1,590,648	805,138	942,690	*40
Potatoes, bushels	8,068	9,250	9,065	11	651,916	767,750	743,330	14	335,946	790,782	780,496	132
Truck vegetables	19,643		30,000	52					1,142,961		3,953,569	246
Melons, number	10,511				8,665,130	10,000,000						
Canteloupes, number	1,037				2,720,780	3,500,000						
Sugar, pounds					45,590				2,256	2,800		
Syrup, gallons					805,064				310,799	320,322		
Sugar Cane* tons	11,552				122,384				178,323	182,116		
Sugar Cane and products									429,425	487,524		
Cowpeas, bushels	143,070				1,162,705				859,932	900,231		
Sorghum and Syrup	7,250								178,323	180,000		
Sweet Potatoes, bushels	48,831				3,369,957				1,538,205	1,623,000		
Broom Corn, pounds	21				11,280				823	718		
Tea, pounds										9,600	12,000	
Pecan Nuts, pounds					13,020		22,000		3,000	7,000	7,500	
Vegetables, all classes	148,062								4,064,847			
Farm Gardens	20,981											
Asparagus, bunches	403		1,012		355,400							
Peanuts, bushels	7,162				131,710				106,018	108,000		
Orchard Fruit									272,792			
Grapes, Wines									82,706			
Small Fruit									59,486			
Sub-tropical Fruit									1,147			
Strawberries, quarts	499		850		845,695						260,000	
Dairy produce									3,232,725	3,600,000	†3,673,455	13
Milch Cows (No.)		131,645	136,911						2,541,723	3,804,540	†3,833,508	50
Butter, pounds					8,150,437							
Milk, gallons					44,031,528							
Sheep (No.)	71,538	60,034	60,034						111,770	155,488	138,439	
Poultry (No.)									889,953	1,000,000	†1,022,009	14
Eggs, dozen	9,007,700								925,966	1,001,215	†1,016,264	9
Bees and Products, value									142,677	149,215	†150,522	5
Honey									92,857			
Hay and Forage, tons	106,124				213,246				2,304,734	2,240,000	†2,296,768	
Orchard Products									416,133	500,173	†516,981	24
Value of all Agri. Products									68,266,912	76,721,786	†78,412,763	14
Value of all Farm Property									153,591,159	170,462,102	†173,836,291	13
Value of all Live Stock									20,199,859	26,765,732	†28,078,906	39

*Decrease. †Estimated. Note.—For 1907 comparative figures see pages 263 and 585.
Cotton in 1907—Acres, 2,426,000; product, 1,186,672 bales; value, $72,657,817.

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2---THE STORY OF KING COTTON



SAMPLING THE COTTON.

COTTON has been for many years the leading money crop in the agriculture of South Carolina, and this State ranks fourth in acreage and in the number of bales produced—one-tenth of the South's entire crop. The cotton grown in this State is as good as any grown in the cotton belt; its staple is as good and it often grades higher on the market. This applies to upland or short staple cotton. In the case of Sea Island cotton the South Carolina long staple so far outranks all other long staple cottons that comparisons are unnecessary. As this is written, a South Carolina planter of Sea Island cotton has sold his entire production of long staple cotton for a period of five years to come at 80 cents a pound—a price that makes it almost worth an equal quantity of silk.

At this time South Carolina's cotton crop considerably exceeds seventy-two millions of dollars in value. The effort is herewith made to present carefully prepared and strictly accurate statistics in regard to everything relating to cotton.

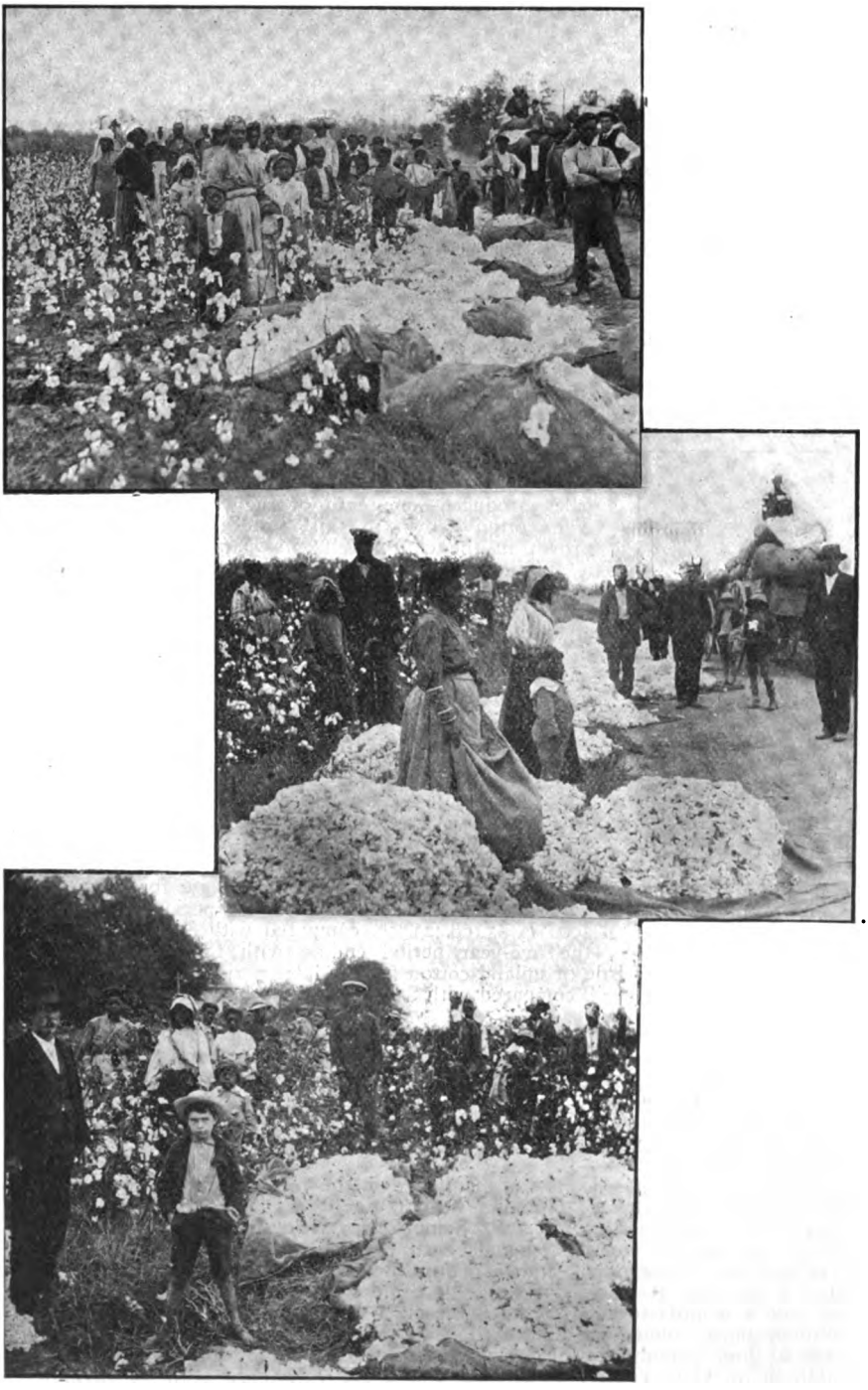
The value of the South's cotton crop of 1907 is $700,956,011, compared with $632,298,332 for 1905. The value of the crops for the five-year period ending with 1906 is $3,168,423,569, compared with $1,529,502,325 for the five-year period ending with 1899. The average value of a 500-pound bale of upland cotton for the later period is $50.05, excluding the value of the seed, compared with $31.75 for the other period, an increase of $18.30 per bale.

The average prices of upland cotton have ranged from 8.20 cents to 12.16 cents in five years. Sea Island cotton in 1906 grown in South Carolina sold at an average of 36.70 cents per pound, while that grown in Georgia and Florida averaged 28.65 cents.

The increase in acreage in South Carolina, North Carolina, Georgia and Alabama since 1879 has been 45.6 per cent., while the increase in production has been 96.8 per cent.

History of Cotton.—"Cotton is mentioned in the records of the colony," says Hammond, "as early as 1664, and in 1747 seven bags appear on the list of exports from Charleston. In 1787 Samuel Maverick and one Jeffrey shipped three bags of one hundred pounds each of seed cotton from Charleston to England as an experiment, and were informed for their pains by the consignee that it was not worth producing, as it could not be separated from the seed. In 1790 a manufactory of cotton homespuns was established by some Irish in Williamsburg County, the lint used being picked from the seed by hand. A task of four pounds of lint per week being required of the field laborers in addition to their ordinary work. All this speedily changed with the invention of the saw gin by Eli Whitney in 1794. The first gin (patented by Ogden Holmes), moved by water power, was erected on Mill Creek, near Monticello, in Fairfield, by Capt. James Kincaid, in 1795. General Wade Hampton erected another near Columbia in 1797, and the following year gathered from six hundred acres six hundred bales of cotton, and cotton planting became soon after

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COTTON PICKING SCENES.

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the leading industry in nearly every county in the State. The crop steadily increased in size until 1860, when the three hundred and fifty thousand bales produced in the State were worth something over fourteen millions of dollars. From this date to 1870 there was a great decline, the crop of that year being more than one-third less than the crop of ten years previous, and reaching only two hundred and twenty-four thousand five hundred bales."

Cotton is mentioned by McCrady as being obtained from the West Indies in 1724 in exchange for lumber, etc. He says, further, that cotton had been exported from South Carolina before the end of the seventeenth century. Just after 1737 Elizabeth Lucas tried cotton culture, but "met with little success."

The Crop of Today.—It is needless to trace the growing of cotton through the several stages of development of the industry. It is today South Carolina's chief "money crop," and facts about it are desired. It is difficult, even under the favorable conditions existing in this State, to produce cotton at much less than 5½ cents per pound, but the cost of production necessarily varies very materially. South Carolina's cotton crop for the past six years has reached proportions that now make the average crop in this State a crop of 956,672 bales, worth $42,579,831, and her manufacturing development has grown to such an extent that the cotton mill plants are consuming a total of 761,410 bales, giving annual production worth $51,341,689, thus more closely bringing together the cotton manufacturer and the cotton grower of the State.



COTTON FARMER'S HOME.

The largest crop ever produced by the State was in 1904, when it reached 1,192,925 bales, as will be seen from the tables herewith.

The Culture of Cotton.—In order that those not thoroughly familiar with the culture of cotton may be possessed of needful information, the following is given:

COTTON CULTURE.

Dates to Commence Preparations and to Begin and Finish Planting, Picking, Etc.

	Ordinary Staple.	Sea Island.
Begin preparation of land	Feb. 25	Feb. 1
To begin planting	April 15	April 1
To finish planting	May 7	May 1
To begin picking	Aug. 15 to Sept. 1	Aug. 25
To finish picking	Dec. 1	Dec. 10
Average length of staple (inches)	⅞ to 1	1⅛ inches
Average yield lint cotton per acre, census to 1900 (hundredths of a bale)	.40	125 pounds
Average yield of seed cotton per acre	577 pounds	500 pounds
Extremes of short and long staple		1½ to 2½

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EXHIBIT OF HYBRID COTTONS.

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SOUTH CAROLINA COTTON CROP.

Years.	Weight Per Bale.	Cost of Picking (Per 100 Pounds).	Average Price Pe Pound.
1907-8..	481.3	.....	.....
1906-7..	481.2	.48	10.01
1905-6..	486.1	45	.10.94
1904-5..	486	45	.08.66
1903-4..	483.5	40	.12.16
1902-3..	490	.40	.08.20
1901-2..	485	.39	.07.77
1900-1..	485	.40	.09.44
1899-0..	492	.38	.07.12

Of Value.—There is a constant demand for the information given in the tables contained in this chapter. It may be mentioned that the prices of cotton from 1850 to 1860 ranged from 8 cents to 16½ cents; from 1860 to 1870, from 10 cents to $1.90, the latter being the maximum price ever paid; from 1870 to 1880, from 25⅞ cents to 9½ cents; from 1880 to 1890, from 13½ cents to 5½ cents, and from 1890 to 1900, from 7 5-16 cents to 13½ cents in rare instances.

South Carolina's Cotton Statistics.—Special attention is called to the two tables herewith, which show that cotton is raised generally throughout South Carolina, and indicate the principal locations for productiveness.

SOUTH CAROLINA COTTON CROP FOR PAST SEVEN YEARS, BY COUNTIES.

(Including Sea Island in Beaufort, Berkeley, Charleston and Colleton.)

Counties.	1901.	1902.	1903.	Maximum Crop. 1904.	1905.	1906.	1907.	Average Crop.
Abbeville..	26,988	27,007	26,528	36,290	34,414	32,925	41,812	30,684
Aiken..	25,273	25,860	20,671	35,694	33,393	23,018	34,720	27,235
Anderson..	40,683	47,827	43,557	66,067	55,754	50,791	65,182	50,779
Bamberg..	12,500	15,962	13,928	23,917	22,238	16,186	16,562	17,455
Barnwell..	26,414	30,975	28,992	46,400	41,349	31,081	39,012	34,193
Beaufort..	4,315	7,524	3,997	7,101	8,159	6,041	7,570	6,189
Berkeley..	10,556	14,882	12,088	18,409	17,720	12,242	17,668	14,315
Calhoun*..	.....	.....	.....	.....	.....	.....	17,216	.....
Charleston....	6,013	10,340	8,690	10,650	10,812	7,686	11,717	9,023
Cherokee..	8,217	11,088	10,270	15,293	14,311	12,466	14,915	11,932
Chester....	16,491	22,211	19,417	26,531	25,259	23,013	27,351	22,153
Chesterfield...	8,827	13,784	14,120	15,891	14,974	14,994	16,647	13,765
Clarendon..	20,009	27,921	22,659	34,499	30,964	21,696	29,908	26,291
Colleton...	9,276	11,892	9,256	14,977	14,576	11,324	14,745	11,883
Darlington....	25,772	27,700	22,779	32,342	27,948	24,513	31,129	26,832
Dorchester....	6,018	8,418	6,662	10,230	8,848	8,313	10,529	8,081
Edgefield..	20,870	23,456	21,445	28,668	28,862	22,205	31,663	26,249
Fairfield...	18,918	23,953	18,960	26,931	27,024	23,578	28,457	23,227
Florence..	14,568	21,174	19,979	27,962	27,756	22,574	28,041	22,335
Georgetown...	1,212	1,657	1,950	2,338	2,496	1,334	2,348	1,831
Greenville.	25,701	32,523	27,704	40,956	37,269	30,881	40,670	32,505
Greenwood....	27,629	27,769	24,237	31,058	31,811	28,641	37,486	28,524
Hampton..	11,638	12,895	10,537	18,268	19,088	11,343	14,390	13,961
Horry..	6,145	5,314	6,181	9,661	7,158	5,997	6,613	6,742
Kershaw..	14,458	19,158	14,025	19,901	19,645	15,042	18,084	17,087
Lancaster..	14,410	20,151	18,834	22,263	22,152	19,880	22,501	19,615
Laurens...	34,879	37,155	32,005	43,555	43,645	36,874	46,431	38,019
Lee..	26,856	26,856	23,571	36,188	27,022	19,628	26,624	26,683
Lexington.	12,814	14,837	13,752	20,323	20,656	17,144	23,270	16,587
Marion..	21,559	34,386	33,969	45,150	42,788	33,565	44,675	35,219
Marlboro..	28,900	41,144	37,907	42,088	44,875	40,821	53,366	38,364
Newberry..	26,587	32,640	29,847	40,074	39,453	34,798	40,656	33,899
Oconee.	11,149	12,806	9,520	16,205	14,254	11,876	16,761	12,652
Orangeburg...	53,980	70,211	47,912	87,991	75,355	60,319	47,961	65,961
Pickens	8,982	13,462	10,068	16,063	15,681	13,501	18,967	12,959
Richland..	9,838	13,871	8,599	17,042	14,391	10,549	14,739	12,381
Saluda..	14,463	17,093	16,546	22,513	21,172	19,218	24,353	18,501
Sumter....	34,093	30,937	22,072	39,062	32,440	22,645	28,811	30,208
Spartanburg..	29,302	42,894	37,453	57,970	56,401	48,328	60,961	45,391
Union..	12,273	17,296	15,404	20,298	18,282	15,436	19,528	16,498
Williamsburg..	13,904	21,027	20,215	25,909	25,176	15,463	26,298	20,282
York..	22,156	30,744	28,106	40,267	37,842	34,778	48,538	32,262
Totals.	759,581	948,200	814,351	1,192,925	1,112,363	912,602	1,163,565	956,672

*Calhoun County organized in 1908 from parts of Lexington and Orangeburg.

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A FIELD OF "EXCELSIOR" COTTON IN MARLBORO.

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SOUTH CAROLINA COTTON CROP STATISTICS.

Year.	Acreage.	Bales.	Total Value of Crop, Including Sea Island, Linters, and Seed.	Total Value.	Upland.		Sea Island.		Cotton Seed.		Mill Consumption—Bales.	Value of Product of Mills.
					Bales.	Value.	Bales.	Value.	Tons.	Value.		
1907	2,463,000	1,186,672	$72,657,817	$62,321,155	1,158,318	$60,691,063	13,247	$1,630,092	498,633	$10,336,662	774,905	$75,455,019
1906	2,323,000	931,726	49,888,619	42,579,881	904,581	41,580,175	8,071	999,656	389,802	7,308,788	674,588	.....
1905	2,161,923	1,129,426	65,863,633	56,984,989	1,099,666	55,829,160	12,697	1,155,829	514,704	8,878,644	620,839	$51,341,689
1904	2,531,875	1,208,179	56,433,286	48,317,466	1,181,339	47,241,319	11,586	1,076,147	549,480	8,115,820	563,990	.....
1903	2,318,100	829,777	53,195,302	46,255,893	804,410	45,308,682	9,941	952,211	375,916	6,939,409	569,559	.....
1902	2,205,916	962,017	44,551,656	36,992,652	934,868	35,884,378	12,943	1,108,279	442,047	7,559,004	587,126	.....
1901	2,248,569	.....	.....	.....	.....	.....	7,617	.....	.....	.....	607,906	.....
1900	2,195,252	.....	.....	.....	.....	.....	8,149	.....	.....	.....	501,290	.....

SOUTH CAROLINA'S SEA ISLAND COTTON CROP.

Year.	Beaufort, Bales.	Berkeley, Bales.	Charleston, Bales.	Colleton, Bales.	Total Bales.	Value.	Average Price Per Lb.	Per Cent. of Total Cotton Crop.
1906	1,089	18	6,826	138	8,071	$999,656 00	36.70	
1905	2,469	65	9,975	188	12,697	1,155,829 52	26.38	0.8
1904	1,324	33	10,092	137	11,586	1,076,147 09	27.12	0.7
1903	1,174	106	8,566	95	9,941	952,211 10	28.40	0.9
1902	2,484	117	10,300	42	12,943	1,108,279 00	25.00	1.0
1901	1,554	10	6,013	40	7,917	.....	.....	.....

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HAULING COTTON TO MARKET.

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Some Data.—For the benefit of those interested in the commercial cotton crop and who give attention to estimates of the crop, based on actual conditions, the following information is given:

CROP (Bales) BY YEARS.

	1907.	1906.	1905.	1904.	1903.	1902.	1901.
	1,186,672	912,602	1,112,363	1,192,925	814,351	948,200	759,581

CONDITION.

May	.....	.....	.....	.....	.....	.....	.....
June	77	82	78	81	76	97	80
July	79	77	78	88	74	95	70
August	80.5	72	79	91	76	88	75
September	.....	71	75	87	80	74	80
October	.....	66	74	81	70	68	67

MEAN TEMPERATURE.

May	70.8	70.7	73.7	70.6	70.7	74.0	71.4
June	75.4	78.4	78.9	77.0	74.2	78.5	76.7
July	82	78.4	80.4	79.4	80.4	80.8	81.4
August	80	80.6	77.9	77.6	80.6	78.6	78.6
September	.....	78.0	76.2	75.8	72.7	72.1	73.1
October	.....	61.9	64.2	62.4	62.0	63.2	62.4

AVERAGE RAINFALL.

May	4.51	3.00	5.70	2.04	2.69	2.69	7.31
June	5.92	8.88	1.92	4.06	8.09	4.48	6.55
July	3.6	8.40	6.16	5.96	3.59	8.79	4.52
August	4.7	6.62	5.69	8.47	7.15	5.07	9.01
September	.....	4.85	1.91	2.46	3.62	3.74	4.66
October	.....	3.69	1.97	1.10	2.63	4.40	0.80

DATES OF EARLIEST KILLING FROST.

Year.	Charleston.	Columbia.	In State.	
			Date.	Location.
1907	November 14.	October 29.	Nov. 4	Spartanburg.
1906	November 16.	October 29.	Oct 11	Northwestern part.
1905	December 11.	November 22.	Oct. 22	(Six Stations).
1904	December 13.	November 15.	Oct. 16	Aiken. Seivern. Santuc. Seivern.
1903	November 28.	November 28.	Oct. 28	Walhalla.
1902	November 28.	November 28.	Nov. 28	(General).

Grown Generally.—Cotton is grown generally throughout the State of South Carolina from mountains to seacoast. It is noteworthy that the largest yield per acre—four bales—is credited to Lancaster County, in the Piedmont section of the State.

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A FIELD OF EXCELSIOR COTTON.

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Improving the Staple.—For some years experiments have been in progress, conducted by the Federal Government, having in view the hybridization of upland short staple, Sea Island and Egyptian. These experiments have been conducted on a farm near Columbia, S. C., and have had in view the lengthening of the staple of cotton grown on uplands, and, consequently, increasing its market value. Noteworthy success has been attained, and an illustration herewith shows the highest form of culture yet reached as a result. Near Batesburg W. W. Watson has been raising hybrid cotton with marked success, getting excellent prices for his entire product. Dr. Webber, of the United States Department of Agriculture, is the expert who has had these experiments in charge.



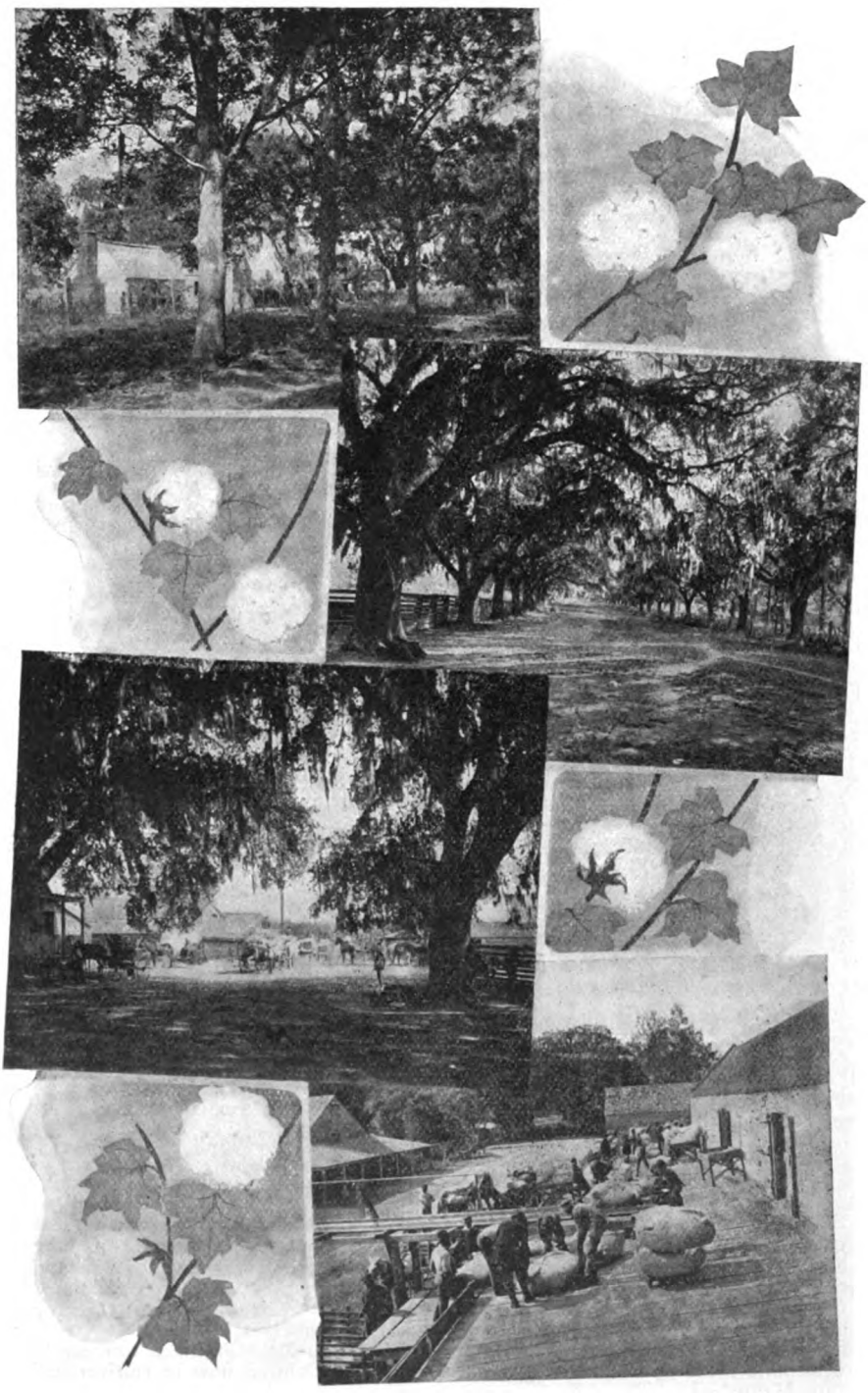
STALK WITH FIBRE SHOWING THE HIGHEST FORM REACHED IN COTTON HYBRIDIZATION OF SEA ISLAND AND UPLAND COTTON—THE SIXTH GENERATION (OCTOBER, 1905). IN THE FRAME ARE SEA ISLAND FIBRES FOR COMPARISON.

SEA ISLAND COTTON.

A Cousin of Silk.—Sea Island cotton is one of the most valuable of all of South Carolina's crops. It is the fibre that is exported to France and is sent back to America, after proper mixture, and often sold as silk. The fibre is long and silky, and is admirable for silk manufactures. South Carolina's Sea Island cotton leads the world in length of staple and in market value. It is claimed that it has been spun into No. 300 thread in France. The statistics of the crop are given with this chapter, and they speak for themselves.

Origin of Long Staple Cotton.—"It would be a matter of much interest to determine the origin and history of the varieties of cotton now in cultivation," says Hammond. "The difficulties of doing this are much increased by the very wide geographical range occupied by the plant. The earliest explorers—Columbus, Magellan, Drake, Capt. Cook, and others—seem to have found it almost everywhere in the broad belt extending from the equator to 30° S., and to 40°

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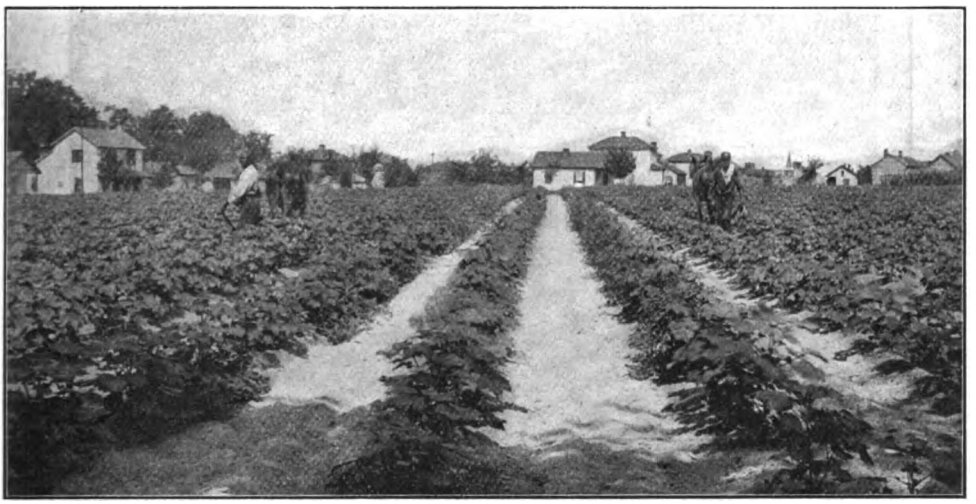


SCENES ON A SEA ISLAND PLANTATION.

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and 45° N. latitude, where it now grows. Although it is not found among those oldest of vestments, the wrappings of Egyptian mummies, its use was known to man in Europe, Asia, Africa, America and the outlying islands of the sea in the remote past, far beyond the historic age. Its very name itself bears evidence to this, occurring as it does in many and in the most ancient languages.

Thus through the Dutch ketoen, Italian cotone, Spanish algodon, we pass to the Greek kiton, turned wrong side out in the Latin tunic, to the Arabic katan, the Syriaic kethene, the Samaritan kitana, the Sanscrit katan, the Hebrew kutonneth (Gen. xxxvii:23, 31), the Ethiopic kethan, the Chaldee kethan, and Gesenius, conducts us to a most ancient and obsolete semetic root, kathan, signifying to cover. Nevertheless, nothing can show more clearly the importance of tracing and understanding the history of plants under cultivation than the variations and improvements in black seed cotton since its introduction on the Carolina coast. It is known that the first bale of long staple cotton exported from America, in 1788, was grown on St. Simon's Island, Georgia. That this bale was grown by a Mr. Bissell, from seed that came from either the Bahama or the Barbadoes Islands—singularly enough the authorities leave this matter in doubt—the Hon. Wm. Elliott saying it came from Anguilla, one of the



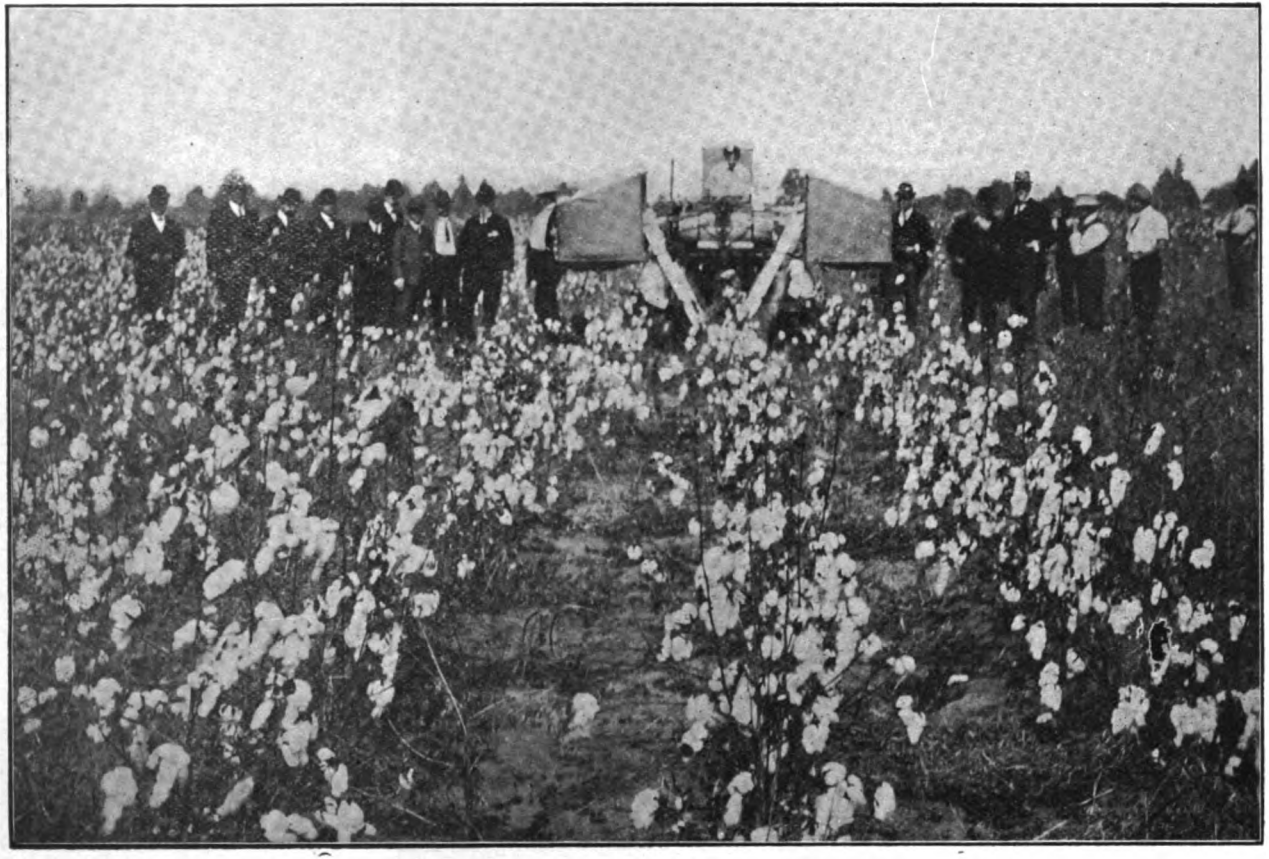
A TYPICAL COTTON FIELD.

Bahamas, and Signor Filippo Partatori (Florence, 1866) saying it came from Cat Island, one of the Barbadoes.

"But as Anguilla is one of the Barbadoes, and Cat Island one of the Bahamas, it would seem difficult to decide to which group of islands we are indebted for these seed. However, as Mr. Thomas Spalding, of Sapels Island, says in a letter to Governor Seabrook, in 1844, that three parcels of long staple cotton seed were brought to a gentleman in Georgia, from the Bahamas, in 1785 and 1786, it would seem that the seed reached our coast from those islands. In the Bahamas it was called gossypium barbadense, in consequence, doubtless, of being brought from Barbadoes.

"In the latter island it was known as Persian cotton (Edward's *West Indies*, vol. IV, p. 363), and was thought to have come from that country, where it was originally derived from the gossypium arboreum of India. Be this as it may, Mrs. Kinsey Burden, of Burden's Island, Colleton County, S. C., obtained some of these seeds from Georgia and planted them. This crop failed to mature, and the first successful crop of long staple cotton grown in South Carolina was planted in 1790, by William Elliott, on the northwest corner of Hilton Head, on the exact spot where Jean Ribault landed the first colonists and erected a column of stone, claiming the territory for France, a century before the English settled on the coast. Mr. Elliott's crop sold for 10½d. per pound. Other planters made us of this seed, but it was not until Kinsey Burden, Sr., of Colleton County, began his selections of seed, about the year 1805, that

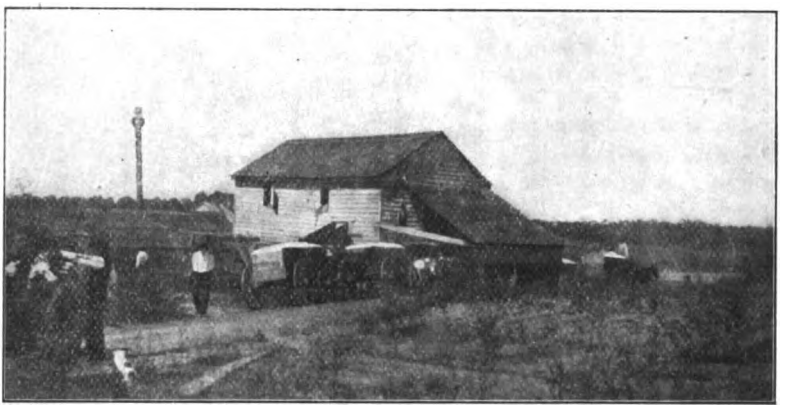
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TESTING A COTTON PICKING MACHINE.

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attention was strongly called to the long staple. Mr. Burden sold his crop of that year for twenty-five cents per pound more than did any of his neighbors. He continued to make selections of seed and to improve his staple, and in 1825 he sold a crop of sixty bales at $1.16 per pound. The year subsequent his crop sold for $1.25, and in 1828 he sold two bales of extra fine cotton at $2.00 per pound, a price not often exceeded since. The Legislature was on the point of offering Mr. Burden $200,000 for his method of improving the staple of cotton, and Mr. Wm. Seabrook, of Edisto, was prepared to pay him $50,000 for his secret, when it was discovered that the fine cotton was only due wholly to improvements made in the seed by careful and skillful selections. Since then the greatest care has been bestowed upon the selection of the seed, and to such perfection was the staple brought by this means that the crops of some planters were sold, not by sample, but by the brand on the bale, as the finest wines are. During the war (between the States) the cultivation of the finest varieties being abandoned on the islands, the seed removed to the interior greatly deteriorated in quality. So scarce, on this account, was good seed directly after the war that I. T. Dill, a cotton merchant in Charleston, at one time had in an ordinary letter envelope the seed from which all the better qualities of long staple cultivated now was derived. Nor have the improvements made by careful selection of the seed



A COUNTRY COTTON GIN.

ceased in later years. The staple has kept fully up to the best grades of former days, and the proportion of lint to seed cotton has been increased. Formerly one pound of lint cotton from five pounds of seed cotton of the fine varieties was considered satisfactory. Thanks to the efforts of Mr. E. M. Clark, a fine variety of cotton has been recently found, which yields one pound of lint to three and one-half pounds of seed cotton, preserving at the same time the strength, length and evenness of fibre characteristic to the best varieties."

In another place in the South Carolina Handbook Hammond says:

"The first crop of Sea Island cotton was raised on Hilton Head, in 1790, by William Elliott. This crop reached its year of maximum production in 1827, when 15,140,798 pounds of long staple cotton was exported from the States; in 1841 it had fallen to 6,400,000 pounds. Since 1856 this crop has fluctuated from a minimum in 1867 of 4,577 bales to a maximum in 1872 of 13,150 bales."

Again he says: "The finest cotton ever produced is the long staple cotton of Edisto Island, which has sold for $2 per pound, when other cottons were bringing only 9 cents."

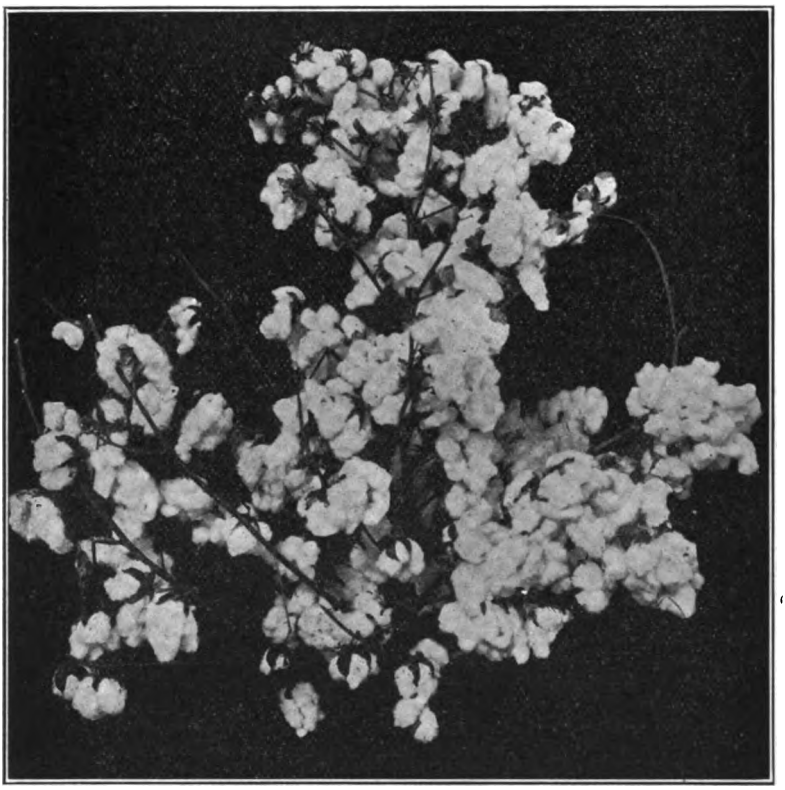
W. A. Orton, the pathologist of the United States Bureau of Plant Industry, in his bulletin dealing with Sea Island cotton (1907), says:

"Our country can feel a just pride in the Sea Island cotton industry, for it produces the longest, finest, and most valuable cotton grown in the world. Its silky staple is used for spinning fine fabrics and laces and is of paramount importance to the thread industry, which requires a considerable part of the crop. Where great strength and durability are essential, as, for instance, in United States mail bags and in pneumatic tires, Sea Island cotton is also employed. The highly organized and laborious methods of culture, the excellent system of seed selection, and the painstaking care of the product which have maintained the high quality of the cotton grown on the Sea Islands are matters of special interest.

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"It is quality rather than quantity that gives economic importance to the Sea Island cotton industry, for the total annual production is less than 1 per cent. of the American crop, or an average for the past seven years of 94,000 bales per annum.

"An improvement in quality, an increase in production, and a greater profit to the acre are all possibilties of the future. They will result from the general adoption of improved methods and the extension over the whole Sea Island cotton belt of the careful system of seed selection and handling now practiced in one portion of the area. On the other hand, conditions are such that the industry may in time be crushed by competition unless the farmers are awake to the necessity of considering the needs of the consumer as regards quality and purity and learn that the cost of production per pound can be reduced by increasing the yield per acre and that a diversified cropping system is safer and more profitable than the all-cotton plan.



A SPECIMEN STALK OF EXCELSIOR PROLIFIC COTTON (SEASON 1905), GROWN BY C. F. MOORE, BENNETTSVILLE, S. C.

"The Snow of Southern Summers."—Timrod.

"The successful cultivation of Sea Island cotton in this country is confined to the area lying southeast of a line drawn from Georgetown, S. C., to a point in western Florida. * * *

"In South Carolina the center of production is on the Sea Islands along the coast, where the finest staples are grown. The chief of these islands are James, Edisto, John, and Wadmalaw. * * *

"Atmospheric humidity appears to be a prominent factor influencing the quality of the staple. On the Sea Islands, fields having an ocean exposure are said to produce a finer and glossier staple on account of the moisture-laden ocean breezes, and in the interior one advantage of the lower lands is doubtless their moist air, which is conserved by protecting forests and near-by swamps. * * *

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"The cotton grown in South Carolina is marketed at Charleston, while the interior crop is handled at Savannah, Blackshear, and Valdosta, Ga., Madison, Fla., and other interior towns. There is a marked difference in the style of bale in the two cases. South Carolina cotton is put up in bags, 7½ feet long and about 2½ feet in diameter, containing 300 to 400 pounds. They are filled by hand and pressed in a light hand-screw press. Compression for export is not practiced. As the use of this bag has been confined to the Sea Islands, it serves as a trademark to distinguish the crop in foreign markets.

"In the Charleston district the finest cotton is that grown by a limited number of planters who have for many years paid the most careful attention to seed selection. Their cotton is not only long and fine but is picked with so much regard to cleanliness and uniformity that the grower's private brand on the package is often a sufficient guarantee of its quality.

"These fine 'crop lots' comprise about 35 per cent. of the cotton marketed in Charleston and sell for from 30 to 60 cents per pound. They are all exported. The demand for this extra-fine and high-priced cotton is very limited. The remainder of the South Carolina crop is sold in the usual manner at lower



A MODERN COTTON COMPRESS.

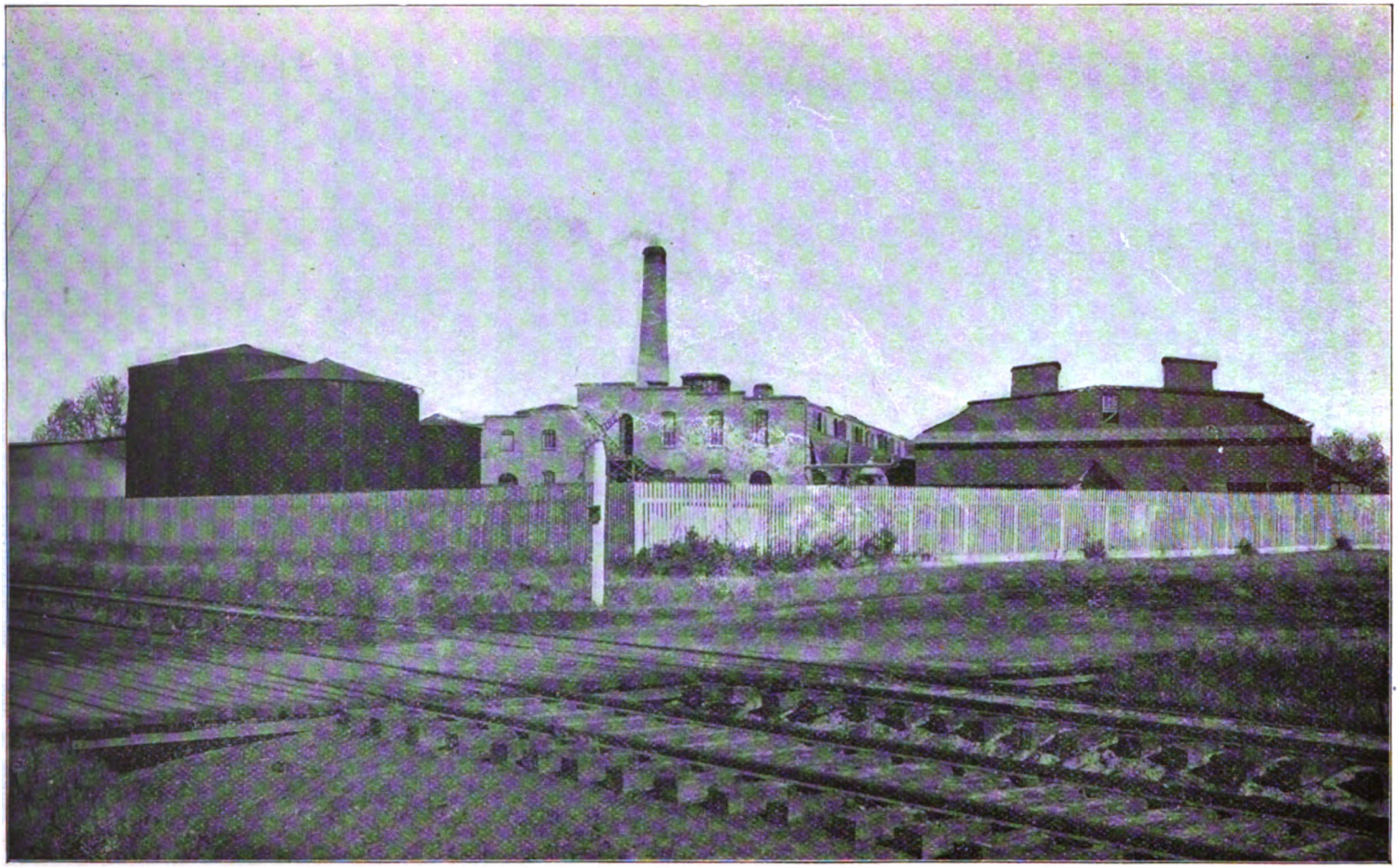
prices. The higher price secured for South Carolina cotton is largely because of its superior preparation, all stained and weak cotton and bits of leaf being removed before baling.

"The best practice in handling the crop may be briefly stated by describing the method followed on the Sea Islands, which should be adopted in the interior in so far as the labor conditions will permit.

"Picking is done whenever enough cotton is open, about every ten days. The cotton is gathered as free from trash as possible and carried to the storehouse, where the next morning each picker sorts his own picking. The cotton is then spread on arbors to dry in the sun. It is watched and turned frequently, and usually dries in one day. After sunning, the seed cotton is assorted by women, who remove any yellow locks, bits of leaf, etc. If very dirty, it is whipped over a coarse wire screen stretched across a small box to take out the sand. Very fine cotton is again sorted or overhauled by another set of laborers. The cotton is then bulked and allowed to remain from four to six weeks before ginning. During the ginning, one or two hands inspect the cotton as it passes to the gins, to remove impurities, and one or two others 'mote' the lint as it passes from the gin to the press, by picking out yellow tufts, etc. By all these means a high grade is maintained for Sea Island cotton, which is reflected in a price per pound several cents higher than that paid for interior cotton."

Essential Facts.—In the ginning of Sea Island cotton the ordinary cotton gin cannot be used. Sea Island cotton is ginned by the Platt roller gin, which is

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A SOUTH CAROLINA COTTON OIL MILL PLANT.

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manufactured in Oldham, England. It is impossible to handle the Sea Island product in the ordinary cotton mill. The Platt gin costs about $125. It is operated by steam power and each gin requires at least two horse power. The yield from each gin is from 90 to 100 pounds an hour of lint cotton. The average ginnery in South Carolina consists of about three gins, although there are some ginneries in Georgia and Florida which have a larger capacity. None of the ginneries in any of these three States run full time. It costs about ¾ of a cent per pound to gin the cotton. The Sea Island planters, in preparing the bales, use bags which are made in Scotland. These bags are 5½ yards long, weighing 2½ pounds to the yard. The bags of the size indicated are sold to the planter at $1.25 apiece.

In packing the cotton a special Sea Island cotton press is used, and at least one is found in every ginner. This press is made and furnished by Charleston manufacturers. The press set up complete costs about $75. It has to be operated entirely by hand. One press can easily bale the lint cotton furnished from six gins.

In regard to the matter of the cost per bale of making the cotton ready for market, in general terms it might be said that for the 50-cents-per-pound grade of cotton it costs on the average 30 cents per pound to make, gin and market the product. The prices of the South Carolina Sea Island cotton—prices paid to the producer—range from 25 cents to 80 cents per pound.

The ginnery is usually a wooden building, which does not cost very much money, consisting of three stories. The seed cotton is always stored on the third floor, whence it passes to the gin on the second floor, and the first floor is devoted entirely to the reception of the cotton seed, the transition, of course, being downward naturally.

The amount of help required in the operation of the South Carolina Sea Island ginnery is not great, about four laborers to the gin being required. Up to the present season this labor has been costing the ginner 50 cents per day.

The South Carolina crop of Sea Island cotton raised during 1905 amounted to about 12,500 bales.

Including negroes and all others engaged in any way in the raising of Sea Island cotton, the total acreage in this State devoted to this crop is, in round numbers, 50,000 acres. Upon the same basis it requires on the average four acres of land to produce one bale of Sea Island cotton.

The long staple cotton raised on the Sea Islands of South Carolina is regarded as the finest staple in the world. The Sea Islands off Georgia and Florida raise excellent long staple, but the seed cannot be produced there. The South Carolina Sea Island growers have recently come to a realization of the fact that their seed was being used to produce each season's crop for the other States, and they have now combined and agreed not to sell any of the South Carolina reproducing seed beyond the borders of their own territory. This action will probably have a marked effect upon the values of the long staple raised off the coast of the other two States named.

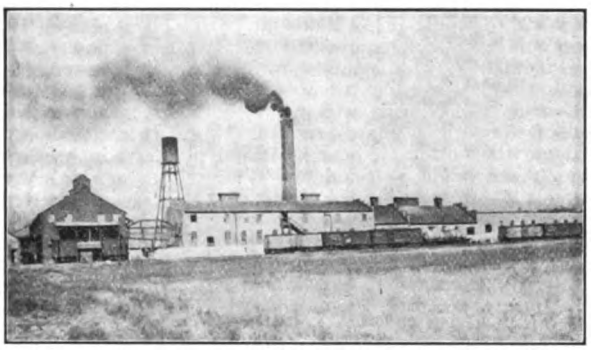
COTTON SEED PRODUCTS.

It is impossible, in the scope of this work, to go into interesting details of cotton by-products. The cotton seed oil and meal industry has assumed noteworthy dimensions, and the cotton seed is a noteworthy item, as is shown by the accompanying table. Elsewhere is mentioned the establishment of the first cotton seed oil mill by Mr. Waring at Columbia. At present the cotton seed oil and meal industry is in a flourishing condition and is destined to be-

COTTON SEED PRODUCTS 1906.

Number of establishments	104
Total value of products	$6,258,182
Oil (gallons)	10,347,040
Meal and cake (tons)	105,152
Hulls (tons)	93,770
Linters (pounds)	9,053,660
Linters (bales)	19,124

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WHERE THE COTTON OIL IS MADE.

come one of export and import importance. The many valuable uses to which the oil and the meal and cake are capable of being applied are only just beginning to become known. At this date the cotton seed mill interests, by concerted action, are undertaking to acquaint the markets of the world with the qualities of these products, and a marked development of the industry may be expected.

COTTON CULTURE

J. S. NEWMAN.

While the natural habitat of the cotton plant is in the tropics, its cultivation has reached its highest perfection in the North Temperate Zone.

This is no doubt due largely to the fact that in that region it has received more intelligent cultivation, but mainly to the influence of climatic conditions, which, while diminishing the tendency to weed-production, increase fruitfulness. These circumstances, together with the favorable meteorological conditions for harvesting the crop, have rendered the Southern United States the most successful producers of this most important textile plant of the world.

Since profit to the producer of the raw material depends upon the margin between the cost of production and the market price of the lint, it is natural and proper that he should seek all available information looking to realizing maximum production at minimum cost.

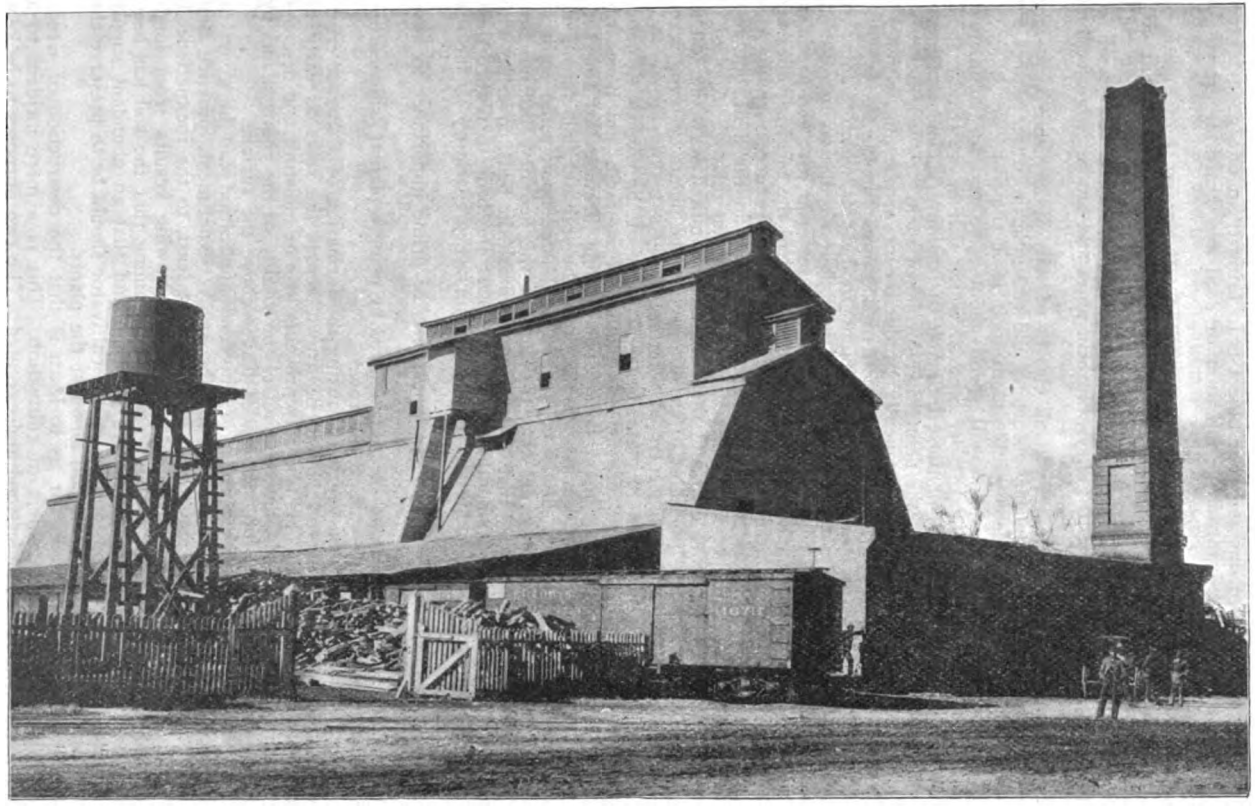
Preparation of the Soil.—No stereotyped rule can be prescribed for this important part of the work. The character of the soil and subsoil must exercise a controlling influence in determining how and when this necessary preliminary work shall be done.

On stiff soils, covered with vegetation, other than that of leguminous plants, fall plowing is desirable, (a) to expose the soil to the action of the winter frosts, and (b) to afford the necessary time for the decay of the grass and weeds turned in.

If a strong clay subsoil underlies the soil, the plow should be made to bring to the surface a small portion of the subsoil to be aerated, pulverized and by the subsequent preparation incorporated with the soil. At the same time, while the subsoil is comparatively dry, it should be broken as deeply as possible without being brought to the surface. It the remains of legumes, such as pea vines, the growth of the previous season, cover the surface, the plowing should not be done so early, lest through their rapid decomposition the nitrogen which they contain be leached and lost to the next crop. Sandy soils, unless covered with vegetable matter, need not be turned, nor subsoiled unless underlaid by clay subsoil. In spring, when drying winds prevail, causing rapid evaporation and consequent baking of the surface, the land remains in good condition for the plow but a short time. This desirable condition may be prolonged by the use of the cutaway or disc harrow by means of which the surface may be rapidly stirred, the evaporation checked, and, besides extending the period of the seasonable condition for plowing, reduces the labor of the team and prevents the surface from breaking in clods.

The importance of deep and thorough preparation of the soil cannot be too strongly emphasized. Why is this thorough tillage so important? A certain degree of temperature, varying with different plants, a supply of moisture and presence of oxygen of the air are necessary as well for the germination of seed as for the healthful growth of plants. Tillage enables the soil to absorb moisture

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TYPE OF PLANTS MANUFACTURING COMMERCIAL FERTILIZERS.

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and allows a free circulation of air, which, in spring, is warmer than the soil. It promotes the multiplication of certain beneficial micro-organisms, which, though not seen by us, are nevertheless most valuable co-laborers in promoting the growth of our plants.

In the preparation of our soils our object is to bring them into good texture to induce prompt and vigorous germination of seed and healthful growth of our plants.

Good texture cannot be secured, however, without the presence of humus or decayed organic matter. No soil can be profitably productive without this constituent, and yet millions of acres of the cultivated lands of this State are sadly deficient in this necessary constituent, and other millions have been rendered unproductive and abandoned to gulleys, old field pines and broom-sedge, because of its absence.

Besides promoting good texture in all classes of soils, it furnishes all of the natural supply of nitrogen, and, by absorbing and retaining moisture, enables our cultivated plants to appropriate soluble plant food from the soil.

The farmers of South Carolina will spend about $5,000,000 for commercial fertilizers this season, a very large per cent. of which will be wasted by application to poorly prepared soils or those incapable of retaining sufficient moisture to enable the plants to utilize the plant food furnished them.

No country has ever been permanently productive or prosperous without a system of rotation involving the perpetuation of a humus supply.

Application of Fertilizers.—The soluble plant food upon which plants are dependent for their growth must be conveyed into their circulation in solution. The moisture is obtained by contact of the fertilizing material with soil particles. If, therefore, very heavy applications are made in the drill the fertilizer does not come in contact with sufficient soil to secure the moisture necessary for this solution. It is wise, therefore, to apply small quantities in the drill, but very heavy applications should be made broadcast over the open furrow. Applied in this way, a part falls in the drill and the remainder is mixed with the soil as the land is bedded, and is less liable to cause injury to the plants by being taken into their circulation in too concentrated solution.

Bedding the Land.—The cotton plant, being a native of the tropics, demands a high degree of temperature for the germination of its seed, and hence the universal practice of planting upon beds. The prompt drainage of the beds facilitates the entrance of the warm spring air into the soil and thus raising its temperature. The fertilizers should be applied and listed upon some eight or ten days before planting, in order that the base of the bed may become firm before the seed are deposited. Just before planting finish the beds, covering with fresh soil the list. Draw a smoothing harrow *across* the beds to reduce their height, drag out trash and clods and flatten the surface preparatory to the use of the planter.

In order to facilitate all subsequent work, it is of prime importance to have the seed planted in a straight line.

Much labor will be saved and seed economized by using a planter which drops the seed at the desired intervals in the row.

If rain falls before the seed vegetate, causing the formation of a surface crust, a weeder or smoothing harrow should be drawn across the rows as early as practicable after the rain. This not only prevents loss of moisture and destroys germinating grass and weeds, but economizes the vitality of the young plants by reducing the difficulty of lifting their seed leaves above the surface.

Cultivation.—While no fixed rules of universal application can be given or followed, the conclusions derived from the study, experiment, practice and experience of thirty years may prove of service, at least, to the inexperienced. The most serious obstacle to success in cotton growing results from long-continued drouth during the growing season. Assuming that the soil has been deeply and thoroughly prepared before planting, and that an abundant supply of humus is present, the constant aim of the cultivator should be to preserve the proper *surface* condition of the soil amongst the plants.

The most important lesson for us to learn is that the destruction of weeds and grass is not the sole object of cultivation. This is a mere incident to a correct system properly understood and executed. The two purposes to be kept constantly in view are: (a) *Avoid* the *mutilation* of the *roots* of the *plants;* and (b) *Keep* the *surface constantly mulched with loose soil,* known now as a "soil mulch." This prevents loss of moisture by evaporation from the whole surface, retaining the moisture *below* the mulch for use in dissolving and conveying plant food into the plant.

A crust upon the surface hastens the escape of moisture which brings the soluble plant food to the surface and leaves it there, out of reach of the roots

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of the plants. From a plot of cultivated land upon which the crust was allowed to form and remain for ten days a sample of soil to the depth of six inches was taken. From an adjacent plot on which the surface was stirred to the depth of two inches immediately after the rain and the formation of the crust prevented, a similar sample was taken.

The chemist found nearly twice as much moisture in the latter as in the former. Based upon this fact and the observation of long experience, the following system of cultivation is recommended for general practice:

The writer has found no implement so satisfactory in the cultivation of cotton and corn as the Terrell heel scrape, illustrated in this bulletin. As soon as the stems of the young plants have attained their full length below the seed leaves and the first true leaf starts from the bud, side with a sixteen- or twenty-inch scrape having narrow blade. This, properly used, scrapes off the edges of the bed and fills the middle furrow. At the same time fine soil is sifted amongst the young plants, covering the young grass in the drill. Leave it in this condition until the grass is smothered. Next hoe the cotton, reducing to a stand and leaving it *absolutely clean*.

The number of plants to the acre should depend upon the fertility of the soil and the habit of growth of the variety cultivated. It is seldom desirable to have the rows narrower than four feet, and on very fertile soil they are often five and even six feet apart.

If planted in rows four feet apart and one foot in the drill a perfect stand will give 10,890 plants to the acre or one to every four square feet. If two feet in the drill, there will be 5,445 plants per acre, or eight square feet to the plant. If eighteen inches in the drill, there will be 7,260 plants per acre, or six square feet per plant.

Continuing the cultivation, follow the hoes immediately with the scrape, using in this and all subsequent cultivation scrapes twenty to thirty inches wide. Fine soil is sifted amongst the young plants, supporting them and mulching the soil around them. Two furrows with the scrape stirs the whole surface between the rows, leaving a fine soil mulch to prevent loss of moisture. Under ordinary circumstances, no more hoeing will be necessary. Instead of four furrows to the row, cutting the roots and leaving an open furrow in the middle to encourage washing, and two or three more hoeings, the scrape does all future cultivation with two furrows to the row without more hoe work. The scrape will cultivate a given area in one-third the time required by the deep-running narrow plows, with one-fourth the labor, and keep the crop in a thrifty growing condition. After a rain the scrape can be used often two days before the soil is sufficiently dry to be plowed deep. As far as practicable, the whole surface should be stirred as early as practicable after every rain, and the cultivation should be continued as long as the plants continue to grow and develop fruit, or until the limbs meet across the rows.

Under this system the cost of production is reduced more than half.

There are five mistakes in common practice in the cultivation of cotton: (a) Poor preparation of the soil. (b) Failing to rotate to supply humus. (c) Leaving the plants too thick. (d) Deep cultivation with narrow plows. (e) Laying by the crop too early.

The accompanying illustrations of the Terrell heel scrape, a cheap and effective cultivator, will aid in showing just how the parts are adjusted for shallow cultivation. It is usually found necessary to have the wings flattened in order to have them slip under the surface without dragging the soil.

In handling the scrape the handles should be pressed down and held firmly, so that the wings will cut as deeply as the point.

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COTTON SEED OIL MILLS—1907.

County.	Location.	Corporation.	Daily Capacity in Tons.	Actual Value as Determined by State Board.
Abbeville.	Antreville, S. C.	Antreville Oil Mill	10	$12,000
	Donalds.	Donald Oil Mill	15	15,000
	Lowndesville.	*Lowndesville Oil Mill	15	16,000
	McCormick.	*McCormick Oil Mill	15	16,000
	Abbeville.	Southern Cotton Oil Co.	20	26,000
Aiken.	Sally.	Sally Oil Mill	20	36,000
	Aiken.	Southern Cotton Oil Co.	.....	30,000
	Kathwood.	Southern Cotton Oil Co.	16	20,000
Anderson.	Belton.	*Broadway Oil Mill	20	32,000
	Anderson.	*Excelsior Oil Mill	30	32,000
	Anderson.	*Farmers Oil Mill	35	35,000
	Honea Path.	*Honea Path Oil Mill	20	20,000
	Pelzer.	*Moneynick Oil Mill	30	32,000
	Pendleton.	*Pendleton Oil Mill	15	20,000
	Anderson.	Peoples Oil and Fertilizer Co.	40	36,000
	Starr.	Starr Oil Mill	20	20,000
	Townville.	Townville Oil and Fertilizer Co.	20	5,888
	Williamston.	*Williamston Oil Mill	20	18,000
Bamberg.	Bamberg.	The Cotton Oil Co.	25	28,500
	Denmark.	The Cotton Oil Co.	20	20,000
Barnwell.	Fairfax.	Fairfax Cotton Oil Co.	15	25,000
	Allendale.	Seaboard Cotton Oil Co.	.....	38,500
	Barnwell.	Southern Cotton Oil Co.	33	37,500
Charleston.	Charleston.	Southern Cotton Oil Co.	100	80,000
Cherokee.	Blacksburg.	Blacksburg Cotton Seed Oil Co.	20	16,000
	Gaffney.	Victor Cotton Oil Co.	30	33,334
	Wilkinsville.	Wilkinsville Cotton Oil Co.	10	10,000
Chester.	Chester.	Southern Cotton Oil Co.	40	35,000
Chesterfield.	Cheraw.	South Atlantic Oil Co.	18	30,000
Clarendon.	St. Paul.	Clarendon Cotton Oil Co.	20	16,000
	Manning.	South Atlantic Oil Co.	18	25,000
Colleton.	Walterboro.	Walterboro Cotton Oil Co.	10	25,000
Darlington.	Hartsville.	Hartsville Oil Mill	45	45,000
	Darlington.	Pee Dee Oil and Ice Co.	.....	27,000
	Darlington.	South Atlantic Oil Co.	45	60,000
Edgefield.	Johnston.	Johnston Cotton Oil Co.	30	25,000
Dorchester.	St. George.	St. George Cotton Seed Oil Co.	20	20,000
Fairfield.	Winnsboro.	Southern Cotton Oil Co.	30	30,000
Florence.	Timmonsville.	South Atlantic Oil Co.	20	17,000
	Florence.	Southern Cotton Oil Co.	20	40,000
	Timmonsville.	Timmonsville Oil Co.	25	30,000
Greenville.	Travelers Rest.	Blue Ridge Cotton Oil Co.	9	16,000
	Fountain Inn.	Fountain Inn Oil Mill	.....	16,000
	Greer.	Greer Cotton Seed Oil and Fertilizer Co.	.....	20,000
	Piedmont.	*Saluda Oil Mill	10	15,000
	Simpsonville.	Simpsonville Oil Manufacturing Co.	15	13,333
	Mauldin.	Mauldin Ginnery	.....	5,000
	Greenville.	South Carolina Cotton Oil Co.	85	75,000
	Greenville.	Southern Cotton Oil Co.	20	20,000
Greenwood.	Bradley.	Bradley Cotton Oil Co.	20	20,000
	Coronaca.	Coronaca Oil Mill	.....	12,000
	Greenwood.	Southern Cotton Oil Co. (Mill No. 1)	30	35,000
	Greenwood.	Southern Cotton Oil Co. (Mill No. 2)	.....	21,000
	Ninety-Six.	*Ninety-Six Oil Mill	20	20,000
	Troy.	Troy Oil Mill	20	20,000
Hampton.	Brunson.	Farmers Cotton Oil Co.	.....	26,000
Kershaw.	Camden.	Southern Cotton Oil Co.	40	60,000
Lancaster.	Kershaw.	Kershaw Oil Mill	.....	45,000
Lancaster.	Lancaster.	Lancaster Cotton Seed Oil Mill	40	60,000
Laurens.	Goldville.	Blalock Oil Mill	20	7,500
	Clinton.	Clinton Oil and Manufacturing Co.	25	22,500
	Cross Hill.	Cross Hill Oil and Hosiery Mill	20	26,667
	Lanford.	Farmers Oil Mill Co.	12	15,000
	Gray Court.	Gray Court Oil and Manufacturing Co.	15	16,000
	Laurens.	Southern Cotton Oil Co.	30	25,000
Lee.	Bishopville.	Lee County Manufacturing Co.	25	40,000
Lexington.	Leesville.	Leesville Cotton Seed Oil Mill	8	15,000
Marion.	Dillon.	Southern Cotton Oil Co.	50	70,000
	Hamer.	South Atlantic Oil Co.	18	30,000
	Marion.	South Atlantic Oil Co.	18	30,000
Marlboro.	Bennettsville.	Southern Cotton Oil Co.	40	40,000
Newberry.	Newberry.	Farmers Oil Mill	40	30,000
	Little Mountain.	Little Mountain Oil Mill and Fertilizer Co.	12	15,000
	Pomaria.	Pomaria Oil Manufacturing Co.	15	15,333
	Prosperity.	Prosperity Cotton Oil Mill Co.	20	22,000
	Newberry.	Southern Cotton Oil Co.	35	35,000
Oconee.	Seneca.	*Seneca Oil Mill	30	15,000
	Westminster.	Strother & Phiney Oil Mill	10	20,000
	Westminster.	Westminster Oil and Fertilizer Co.	10	20,000
Orangeburg.	Cameron.	Cameron Oil Mill	14	20,000

*Branch of Anderson Fertilizer Works.

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COTTON SEED OIL MILLS—1907.—(Continued.)

County.	Location.	Corporation.	Daily Capacity in Tons.	Actual Value as Determined by State Board.
Orangeburg. . . .	Fort Motte. . . .	Fort Motte Oil Mill..	20	$20,000
	Rowesville. . . .	Rowesville Cotton Oil Co..	15	30,000
	Orangeburg. . . .	Southern Cotton Oil Co..	25	25,000
	St. Matthews. . .	Southern Cotton Oil Co..	30	25,000
Pickens.	Easley.	Easley Oil Mill..	10	15,000
	Liberty.	Liberty Oil Mill..	20	12,000
	Pickens.	Pickens Oil Mill..	.....	18,000
Richland.	Columbia.	South Carolina Cotton Oil Co..	94	108,333
	Columbia.	Southern Cotton Oil Co..	.....	133,333
	Columbia.	Taylor Manufacturing Co..	60	66,667
Saluda.	Saluda.	Saluda Oil Mill Co..	12	12,000
	Ridge Spring. . .	G. J. Strother Oil Mill..	15	16,000
Spartanburg. . . .	Cowpens.	Cowpens Oil Mill Co..	20	20,000
	Campobello. . . .	Campobello Oil Mill..	10	15,000
	Cross Anchor. . .	Cross Anchor Oil Mill Co..	10	12,000
	Fairforest.	Fairforest Oil Mill Co..	20	20,000
	Pauline.	Pauline Oil Mill..	7½	16,000
	Rich.	Rich Hill Oil Mill..	20	18,000
	Spartanburg. . . .	Southern Cotton Oil Co..	30	40,333
	Wellford.	Tyger Shoals Milling Co..	20	22,500
	Woodruff.	Woodruff Cotton Oil Co..	25	20,000
Sumter.	Sumter.	Southern Cotton Oil Co..	50	40,000
Union.	Jonesville.	Jonesville Oil Mill..	9	20,000
	Union.	Southern Cotton Oil Co..	.....	25,000
Williamsburg.. . .	Kingstree.	South Atlantic Oil Co..	10	30,000
York.	Rock Hill.	Highland Park Manufacturing Co..	15	30,000
	Yorkville.	Victor Cotton Oil Co..	25	25,000

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3

The Trucking Industry

The development of the trucking industry in South Carolina has been one of the most conspicuous of all the developments in the State in recent years. This industry has heretofore been confined to practically five counties—Charleston, Colleton, Beaufort, Horry and Berkeley. In 1889 the acreage in truck in these counties amounted to only 2,103. In 1900 the total acreage in these counties devoted to truck was 4,928. The rate of increase in the four trucking counties tributary to Charleston during that decade was 295 per cent.

There has in trucking been a growth more rapid than any other one thing in South Carolina in the last half decade. The Charleston District acreage at present, for instance, is estimated by one of the most careful and best posted men on the coast, one intimately identified with the trucking industry, at 24,200 acres, and the value of the truck produced has been estimated at $3,717,000 in this district, against $212,700 six years ago.

Nowhere in the State has such a marked advance in trucking been observed as in Beaufort County, which county had only 30 acres in 1890 and 934 acres in 1900. In 1906 the value of product had leaped to $236,569.30, against $120,730 the preceding year. The rate of growth in the three years preceding 1906, considered in the light of the value of product, was about $100,000 per annum on truck to the Northern markets. It is noteworthy that not only are native whites going more extensively into trucking each year, but a number of Northern and foreign people are doing likewise, and even intelligent negroes have begun the growing of truck for the Eastern markets. Over in Horry County the growing of strawberries and fruits, begun a few years ago by Northwestern pioneers, has developed into a splendid industry. In various portions of the State trucking is beginning to be given great attention.

In the decade between 1890 and 1900 the value of the local market garden products, including small fruits, grew from $215,113 to $1,213,759, an increase of 464.2 per cent.

TRUCKING.

Acreage 1900 (total for State)	19,643
Acreage 1906 (trucking district only)	30,000
Percentage increase	52
Value 1900	$1,142,961
Value 1906	3,953,569
Percentage of increase.	246

The value of the South Carolina trucking industry annually is rapidly reaching into the millions.

More notable even than the rapid development of the industry above indicated has been the increase in the industry in the past six years, as is shown by the accompanying table. A percentage of 246 in increase of value of products speaks for itself.

But the actual figures had perhaps best be given, it being impossible, as this is prepared, to bring these figures up to the 1907 crop:

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	1900.	1905.	Per ct. of Increase.	1906.
Charleston District (all truck)..	$212,200	$2,787,000	1210.3	$3,717,000
Beaufort	100,000	200,000	100	236,596
Horry (strawberries)..	28,100	55,000	95.7	57,000
Miscellaneous vegetables	2,079,862	2,416,218	11.3	.....
Strawberries	59,486	65,000	9.2	.....
Asparagus..	355,400	700,121	96.9	.....
Watermelons (No.)	8,665,130	10,000,000	15.4	.....
Cantaloupes (No.)	.....	3,500.000	....	.....
Value of all vegetables..	4,064,847	.....	....	.....



SHIPPING RADISHES.

History.—Truck growing for market in South Carolina began in the year 1868, when William C. Geraty, now the largest shipper of cabbage plants in the whole world, and his partner, Frank W. Towles, of Martin's Point, Wadmalaw Island, began operations on a small scale. The present unparalleled development began about 1891, growing by leaps and bounds since 1900, until at this time the Charleston district alone has over 24,000 acres planted in truck. From a small beginning the industry has assumed its present large and profitable character, and, as stated, every year witnesses an extension of the industry.



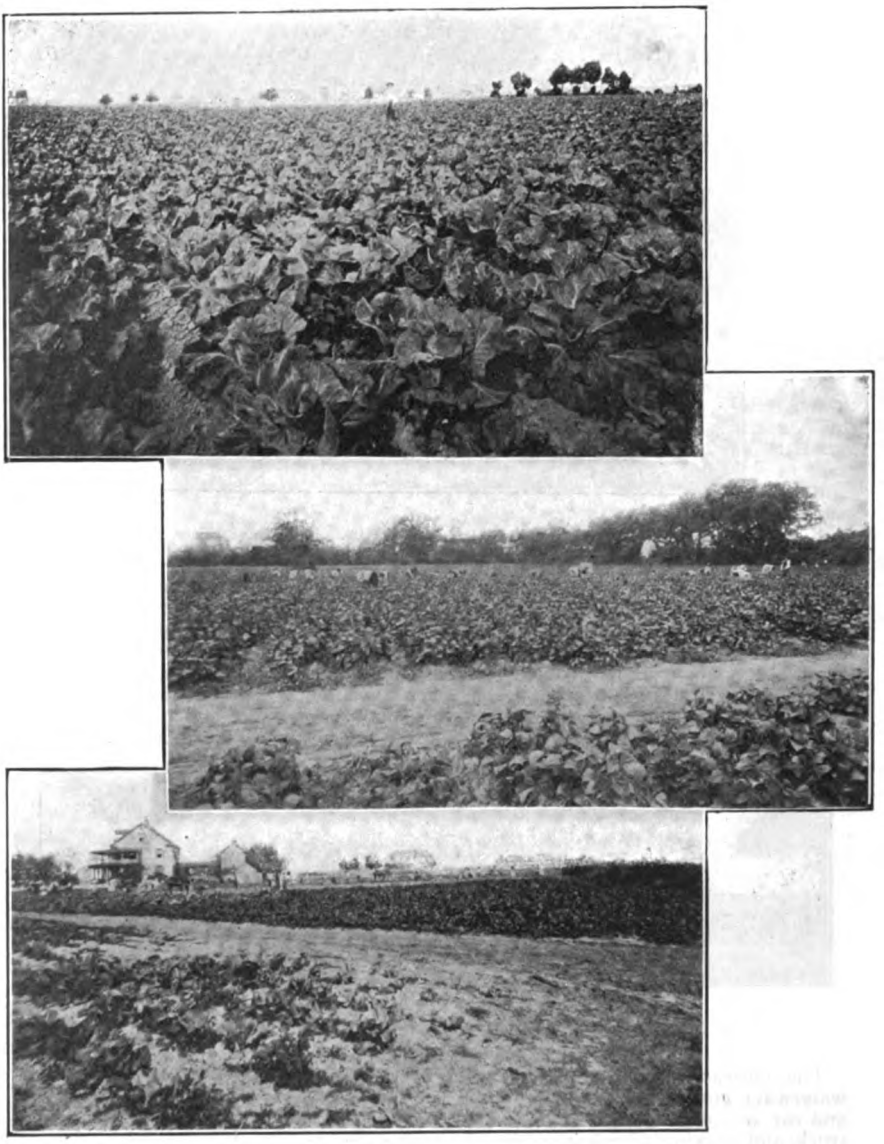
MR. GERATY IN HIS CABBAGE FIELD.

The increased facilities for handling the truck in the improvement of the waterways among the islands and the better railroad facilities in more trackage and car service, are having the effect of extending and promoting the raising of truck and making Charleston one of the greatest centers for the cultivation of truck in the United States.

The beginning of truck raising started on Yonge's Island, now the seat of the industry. The great movement may be said to have started with the experiments of W. C. Geraty,* who, with the financial assistance of F. W. Towles, then a member of the firm, residing in New York, concluded that the Charleston country could raise as marketable a produce as was finding its way on the markets of New York and other large consuming centers. Cabbages and Irish potatoes were selected for the test, and the industry was entered upon in the planting of these vegetables, and the foundation was laid for the present enor-

*Died in winter of 1908.

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VIEWS OF THE GERATY CABBAGE FIELDS.

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mous business. It was soon demonstrated that not only could Yonge's Island produce as fine cabbages and potatoes as were grown elsewhere, but even better, and at a time ahead of the crops of other sections. Gradually extensions of the truck industry were made until now asparagus, cucumbers, beets, beans, peas, sweet potatoes, strawberries, lettuce and other crops are successfully grown. Cabbages are today the greatest crop on Yonge's Island and all through the truck belt. Not only are cabbages grown and placed upon the markets in lots of 10,000 crates, but the growing of cabbage plants for replanting in other sections, especially in Western and Northern communities, has become an industry within an industry, and the shipment of crates for the tender and luscious greens now number annually nearly a million and a quarter crates of an approximated value of $1,500,000.

During the season of 1907 the Geraty cabbage fields grew and sent to the market 58,000,000 cabbage plants. The season of 1908 is well under way as this

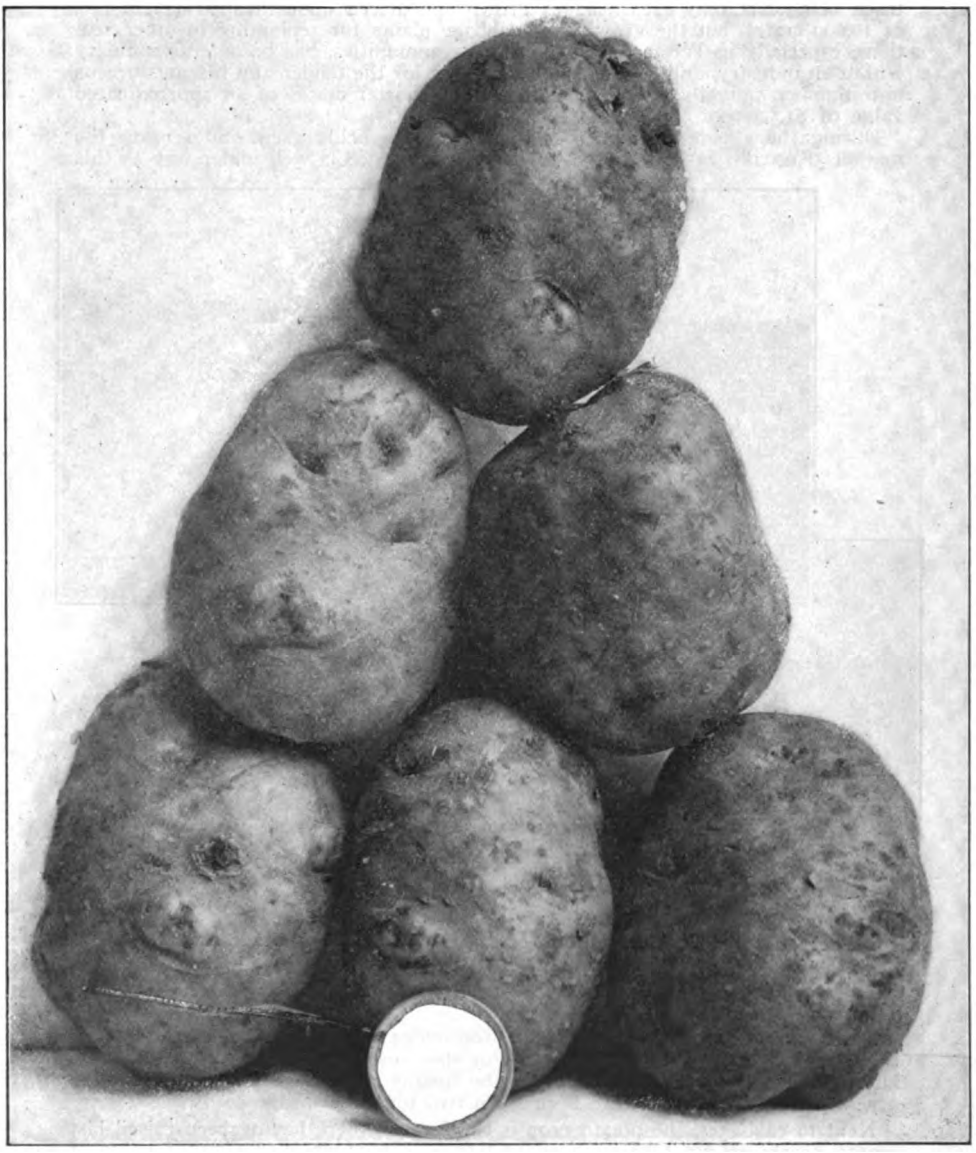


GATHERING TOMATOES IN THE CHARLESTON TRUCKING DISTRICT.

is written, and it is the purpose of the proprietors to raise and put on the market this year 100,000,000 cabbage plants. For this purpose there has been sown the largest cabbage seed bed probably in the history of the world, comprising 120 acres. In this bed there have been sown two tons of cabbage seeds.

Next to cabbages, the potato crop is the largest, there having been raised last season nearly 300,000 barrels on about 6,500 acres, of an approximated value of more than $850,000. Cucumbers were raised on about 3,000 acres, yielding 750,000 baskets of a value of $562,000. The bean crop has been averaging something over 2,000 acres for several years, of 375,000 bushels, worth about $200,000. Asparagus is another choice vegetable, raised about Charleston, of nearly 1,000 acres, of 500,000 odd bunches, of more than $100,000 in value. More than 1,500,000 quarts of strawberries are raised on about 500 acres, of approximated value of $135,000. Acreage of green peas ran last year about 1,000, worth $50,000. Sweet potatoes on about 1,200 acres netted 30,000 bushels of the value of $10,000. Beets, lettuce, radishes and other vegetables, aggregating upwards of 3,000 acres,

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IRISH POTATOES AS COMPARED WITH SIZE OF A SILVER DOLLAR.

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with products worth last season in excess of $300,000, add to the profits of the Charleston truck farmers.

The trucking industry in Horry County is also quite young. The Homewood Colony was formed in 1898 in conjunction with a colony then being formed in Chadbourn, in Columbus County, North Carolina. Twelve thousand acres of land in the vicinity of Conway, Horry County, were purchased and about fifty families of people from the Middle West settled on the tract.

The colony was rather crudely formed, for nothing was done for the colonists after they were dumped down on the land, and there was not a soul to show them anything about the culture of truck, especially about strawberries, in the culture of which they intended to engage.

The colonists came on in 1899 and began operations. The first attempt was a failure and many went home—fully one-third gave up. The next year things looked a little better and some individuals made enough money to do on. But many were reduced to desperate straits, the present organizer, Mr. J. Lewis Lee, among them. He was advised by his wife to give up, but he told her that he had two friends, "the Almighty and the cowpea," and, by the grace of God, the cowpea pulled him through.

In the next two years the colony prospered. In 1903 it reached high-water mark, and the average net return was about $300 per acre from the sale of strawberries. One man made $1,494.76 on three acres of strawberries. Cucumbers and radishes were also profitable crops, and money was made on beans.

In the meantime, public sentiment had changed and the condition of the colonists was vastly improved. At first they could get no advances on their crops for buying fertilizers and other necessities of farm life, but at the beginning of the year 1904 they had no such difficulty, all the local merchants and local banks being willing to advance almost anything desired.

A report in 1904 said: "The present season is hardly a fair test of what they can do. It is known to everybody that the first and worst drought of a decade has visited this section at the very time when berries were ripening and that the yield was cut down over a half; some of the truckers claim that they were cut down more than two-thirds. Anyhow, this county has shipped about 150 cars to date and the cars were loaded with beans, cucumbers, radishes, strawberries. The strawberries made about 100 cars, loaded on an average with 250 crates, and the net returns have been about $2.50 a crate.

"Full returns are not all in yet, and it is impossible, therefore, to get the exact figures as to the number of crates shipped by each trucker. Mr. J. Lewis Lee, whose berries would be a fair average of the best class of berries raised, has received $987.62 from the berries grown on three acres. He estimates that his yield was cut down over one-half by the dry weather. From the one point of Conway at the end of the trucking belt there have been shipped out 31 cars of strawberries, valued net at $25,000 to the growers, which is not a bad showing for a few men in an off-year.

"Beans and cucumbers are being shipped now. Prices are low now and therefore results are not what they would be even on an average market, but better prices are looked for, and with a favorable turn in this market the truckers will come out way ahead for the season.

"The truckers have all had exceptionally good health since their arrival in South Carolina. There has not been a single case of serious illness among them and they are satisfied and even enthusiastic over the advantages of their adopted home.

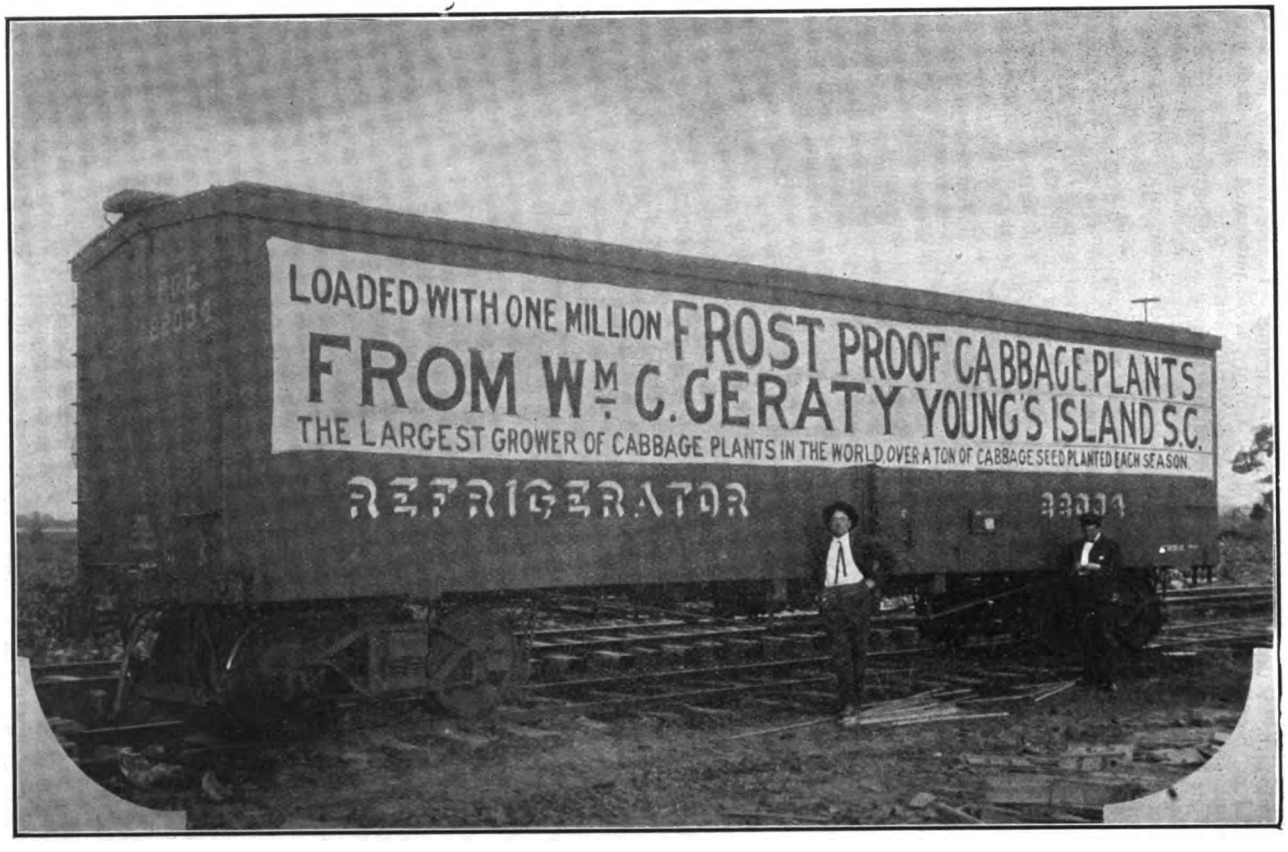
"It is but fair to say that these first colonists settled on worn-out savannahs or in the woods, as did most of their brethren in North Carolina, and that in the space of four years they were independent, and despite a severe drought this year, they will make money. When it is considered that four years ago there were scarcely any strawberries grown in this section, and that the present trucking crop from the territory within 40 miles of railroad from Chadbourn, N. C., along one main line, will exceed $3,000,000 and may go to $5,000,000, some idea can be had of the enormous strides made by scattered farmers without capital.

"From present indications, the trucking area in Horry County will be increased over 200 per cent. for next year, and greater variety of truck will be grown.

"All places within this zone have quick connection with New York city and other Northern points by refrigerator car, the rate to New York city being 72 cents; to Boston, $1.04. The Armours ice the cars at Chadbourn, where they keep a large ice storage plant, with a capacity of 12,000 tons.

"The market here comes midway between Florida and Norfolk, thus giving a clear field for growers to get in without opposition. The climate is mild and equable, the Gulf stream being only 50 miles off shore and the entire region

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SPEAKS FOR ITSELF.

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pierced by large rivers. Winters are noted for mildness, and summers are never excessively hot, but much cooler than points a hundred miles inshore.

"The region has a special advantage in Irish potato culture, and very large yields are recorded. One party made at Pine Island 160 barrels to the acre. Fruits of all kinds flourish. Horry County is in a region of infinite diversity and has hundreds of thousands of acres of land waiting to be opened."

In Williamsburg the trucking industry had its beginning about the same time as the rest of the trucking district. The strawberry flourished and the profits have been uniformly large.

The Charleston District.—The situation during 1906 in the Charleston district is thus described by a writer sent there for the purpose:

"The summary of the Charleston truck is interesting and instructive, showing —according to conservative estimates—about 25,000 acres, of a product value of nearly $4,000,000, with a cost of making about $2,500,000, and a net profit of nearly $2,000,000 last season.



SOUTH CAROLINA RAISED IRISH POTATOES.

"Charleston's truck belt takes in the mainland, Yonge's Island, Mount Pleasant, McClellansville, St. Andrew's Parish, Edisto, Wadmalaw and James Islands. Meggett's, at Yonge's Island, is the center of the truck area in respect of business activity, although not the geographical center of the truck belt. About Meggett's are the largest farms and greater diversification of crops. Here are the farms of Norman H. Blitch, the "Cabbage King," so called from the fact that he raises a larger number of cabbages than any other individual planter in the world; W. C. Geraty, who makes a specialty of raising cabbage plants for replanting and cultivation in other sections, and other substantial truck raisers who have achieved a reputation in the market in other respects. The Meggett's section does not, however, number among its farmers John S. Horlbeck, who has the largest grove of bearing pecans in the world, he belonging to the Mount Pleasant section, just across the Cooper River from Charleston.

"It is possible to drive for miles through the truck belt about Charleston without being able to change the scene of growing cabbages which greet the eyes. When there is a variation from the dark sea-green of the cabbage leaves, it is that of some other truck crop, unless the barns, packing houses or stations of the farms are encountered. Land which could have been bought ten years ago for a mere song now sells at almost fabulous prices, if it can be bought at all, so great has been the result of the extension of the industry. The section is traversed with many miles of railroad tracks, running through cabbage and

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potato fields, and at every mile, and in some instances at a less distance, are station platforms filled with barrels, crates and baskets of vegetables for shipment. Cars are being constantly moved and the places are scenes of much activity and business. Daily shipments go out of Meggett's amounting to several hundred cars, and fast freights of 25 or 30 cars solid of cabbages or potatoes are of daily occurrence during the shipping season, and this, in addition to the express business, which is of large proportions. Refrigerator cars are now being largely patronized, delivering the vegetables in good form at distant destinations and adding to the possibilities of the Charleston market in competing with other truck centers.

"In the handling of this tremendous business perfect system prevails. The farmers and others who direct and control the raising of these large crops and their handling and shipment are men of executive ability and experience. The truck farms and shippers are in constant communication with the markets of the country. Telegraphers and telephone operators, stenographers and clerks are employed in large forces, and the correspondence is heavy, but the work is of an immediate character, and the close and business-like attention which is given to



STRAWBERRY FIELD IN HORRY COUNTY.

it accounts in a measure for the success of the truck movement. Much of the truck is sold to buyers right on the platforms or in the field, but large quantities are also shipped to commission men by the planters; but in all these operations a system prevails which is remarkable in the character of the business and operations, conducted on such a large scale and over so extended an area. That such a measure of success attends the truck industry about Charleston speaks well for the soil, climate, character of the men in control, and the facilities employed in building and promoting the industry."

The accompanying statistical statement, showing the average five-year trucking crop of the Charleston district, and the 1906 crop, tells its own story of agricultural development. It shows the average industry for five years to be 26,400 acres, with a product of $2,787,000, which value is greatly exceeded by the 1906 crop's value.

TRUCK IN THE CHARLESTON DISTRICT

(INCLUDING COLLETON.)

	Av'ge for 5 yrs. exclusive of 1906.	1906.
Potatoes (Irish):		
Number of acres grown	8,000	6,400
Number of barrels grown	400,000	288,000
Value	$800,000.00	$864,000.00
Potatoes (Sweet):		
Number of acres grown	1,200	1,200
Number of bushels grown	32,500	30,000
Value	$12,000.00	$10,000.00
Cabbages:		
Number of acres grown	7,000	6,600
Number of crates grown	1,050,000	1,180,000
Value	$940,000.00	$1,416,000.00

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Asparagus:		
Number of acres grown	900	850
Number of bunches grown	540,000	510,000
Value	$108,000.00	$105,000.00
Cucumbers:		
Number of acres grown	2,500	3,000
Number of baskets grown	500,000	750,000
Value	$300,000.00	$562,000.00
Beans:		
Number of acres grown	2,500	2,200
Number of baskets grown	375,000	165,000
Value	$187,000.00	$275,000.00
Green Peas:		
Number of acres grown	1,400	1,000
Number of baskets grown	70,000	50,000
Value	$70,000.00	$50,000.00
Other vegetables, such as Beets, Carrots, Radish, Cauliflower, Spinach, Turnips, etc.:		
Number of acres grown	2,500	2,500
Value	$250,000.00	$300,000.00
Strawberries:		
Number of acres grown	400	450
Number of quarts grown	1,500,000	1,600,000
Value	$120,000.00	$135,000.00
Summary 1906 Crops:		
Total number of acres planted		24,200
Gross value of crops		$3,717,000.00
Cost of producing the crops		2,420,000.00
Net profits		$1,297,000.00

A Notable Experiment.—From selected ground, five acres, fertilized according to his own formula, C. M. Gibson, on Yonge's Island, had the following experience with cabbage:

Five acres yielded ..... 1,500 crates
Each acre yielded ..... 318 crates
Total worth ($367 an acre), $1,835 net.

Cabbage Plants.—The cabbage plant industry has grown to enormous proportions. Exact comparative figures are wanting. Some figures for 1905-1906:

Shipped by F. W. Towles, Martin's Point	4,000,000 plants
Shipped by W. C. Geraty, Yonge's Island	40,000,000 plants
Shipped by Blitch & Co., Meggett	35,000,000 plants
Rest of Charleston district	21,000,000 plants
Total	100,000,000 plants

Value of above (100 cars), $150,000.

Largest in the World.—The following men in this district are the largest in their respective lines in the world:

Norman H. Blitch, Meggett—Largest grower of cabbage plants, 1,000 acres. Began a poor man, working for small wages in 1891. It costs $110,000 to cultivate his crop. His daily telegraph bill, during shipping season, is $100.

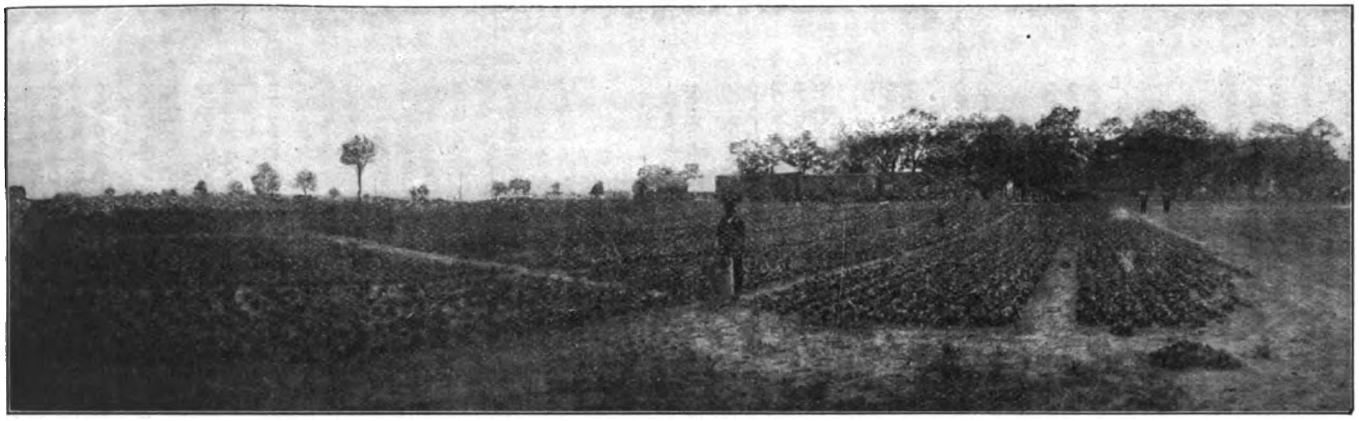
Wm. C. Geraty, Yonge's Island—Largest shipper of cabbage plants. Ships 40,000,000, worth $35,000. Has booked 100 cars (100,000,000 plants) for this year's delivery. Began poor.

John S. Horlbeck, Mount Pleasant—Largest pecan grower. Main grove 600 acres; two smaller groves with 10,000 trees each. Annual production ten tons.

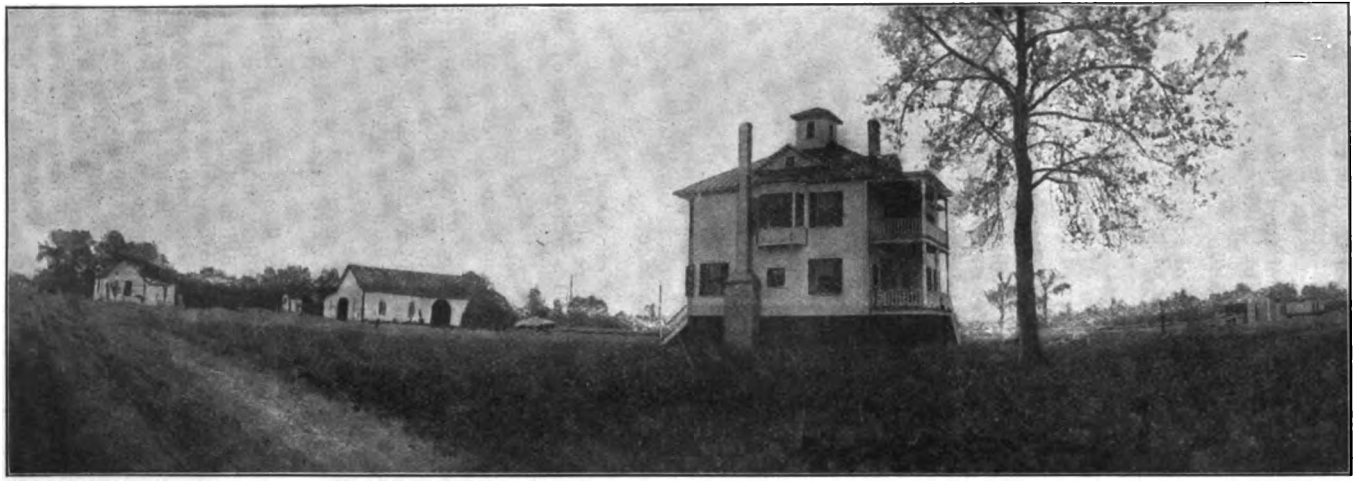
In the Beaufort District.—The growth of the truck business of the Beaufort section has been phenomenal when one considers that it has been accomplished by farmers without means. Men have started with nothing and made fortunes within a few years.

The total cotton crop of the 1905 season, which is given by the Government authorities as amounting to 8,159 bales short staple and 2,469 bales long staple. figured at $50 per bale for the former and $72 for the latter, was worth $462,268.

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THE FARM OF THE RHODE ISLAND TRUCKERS IN BEAUFORT COUNTY THAT NETTED $10,000 IN ONE YEAR.



GREEN PEA FIELD AND NEW HOME OF A TRUCKER IN BEAUFORT, WHO CAME FROM VERMONT.

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So the truck crop amounted to one-half of the total cotton crop, and to $50,000 more than the long staple cotton crop.

The prospects are that the 1907 crop greatly exceeds that of 1906.

TRUCK BUSINESS OF PORT ROYAL ISLAND AND VICINITY FOR SPRING OF 1904.

Truck Acreage.	Port Royal.	Beaufort.	(1) Yemassee.	(2) Total Pkgs.	(3) Price per Pkg.	Total Value.
Asparagus	264	25	960	1,249	$5.50	$ 6,869
Beans	412	135	3,529	4,076	1.25	5,095
Beets	1	2	3	6	1.00	6
Cabbages	....	....	191*	.....	1.00*	.....
	....	....	50†	191	30.00†	1,691
Cantaloupes	....	....	7	7	1.00	7
Cucumbers	2,956	1,889	4,941	9,786	.90	8,807
Lettuce	6	59	1,423	1,488	1.00	1,488
Onions	1	1	12	14	1.00	14
Peas	2,485	2,616	11,510	16,611	1.00	16,611
Potatoes	1,398	152	18,310	19,860	4.00	79,440
Radish	....	....	141	141	.62	87
Squash	40	48	732	820	.75	615
Packages	7,563	4,927	41,759	54,231	.....	.....
Value	$12,883	$5,530	$102,464	.....	.....	$120,730

*Crate. †Carload.

NOTES.—(1) Shipments for all way-stations between Beaufort and Yemassee are billed at Yemassee; that is, shipments from Burton, Island Tank, Grey's Hill, Seabrook, Coosaw, Tomotley and Sheldon are credited to Yemassee.

(2) All packages are crates, except that barrels are used for potatoes and most of the cabbages went by the carload, as stated.

(3) The prices given are net; that is, with transportation and commission charges deducted, and represent the money received.

TRUCK BUSINESS OF PORT ROYAL ISLAND AND VICINITY FOR SPRING OF 1906.

Truck Acreage.	Port Royal.	Beaufort.	(1) Yemassee.	(2) Total Pkgs.	(3) Price per Pkg.	Total Value.
Asparagus	100	41	1,247	1,388	$3.00	$ 4,164.00
Beans	835	169	2,218	3,222	1.00	3,222.00
Beets	59	218	320	597	4.50	2,686.50
Cabbages	....	....	*36½	*36½	*35.00	1,277.50
	13	19	†817	†849	†1.00	849.00
Cantaloupes	11	....	.....	11	1.00	11.00
Carrots	....	....	2	2	1.50	3.00
Corn	1	210	211	422	3.00	1,266.00
Cucumbers	9,983	2,582	11,386	23,951	.50	11,975.50
Egg Plant	....	....	7	7	2.25	15.75
Lettuce	62	3,358	3,447	6,867	1.00	6,867.00
Onions	5	....	1	6	1.00	6.00
Peas	6,758	4,037	16,298	27,093	.60	16,255.80
Potatoes	7,650	326	45,189	53,165	3.40	180,761.00
Radish	28	3,175	464	3,667	1.50	5,500.50
Squash	300	4	641	945	1.25	1,181.25
Tomatoes	36	370	16	422	1.25	527.50
Packages	25,841	14,500	82,264	122,614	.....	.....
Value	$37,009.80	$14,701.60	$183,591.90	.....	.....	$236,569.30

*Car. †Crate.

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It is worth the while to give the experience of two settlers from the East. These men, the Whipple brothers, natives of Rhode Island, planted 36 acres at Beaufort in radishes; took off crop and planted again in radishes, realizing $10,000 from two crops net this year (1906). They planted the same ground in beets; took off a good crop and followed this with cucumbers, making a good yield. After cucumbers, corn was planted, making over 50 bushels to the acre. Five (5) crops on the same ground in the same year, in rotation, were gathered. Herewith is presented a picture of their field, taken in the early spring. They knew but little of farming at the outset. A statement of this accomplishment has been filed with the Department of Agriculture.

Elsewhere.—The trucker is beginning to be a man of importance, financially, elsewhere than on the coast. The larger towns and the cities must be supplied with vegetables, and the truck farmer is no mean man at this day in the suburbs of the principal towns and cities of the State. The market for his produce is ready and profitable.

The trucking industry has come to stay in South Carolina by reason of the advantages of climate and geographical location, by reason of its accessibility to the markets of the East, and by reason of the productiveness of the soil. The active districts of this State are now not only furnishing their products to Eastern but also to Western markets. To the active and ambitious tiller of the soil the coastal plain offers rare opportunities if truck be the crop.

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FIELD OF RIPE RICE ON CREIGHTON PLANTATION.

4

RICE

IN

South Carolina

Almost from the foundation of the colony rice has been one of the principal agricultural crops of South Carolina, the coast country lands being especially adapted to its culture and producing the finest quality of rice raised in America. While rice-growing is not so general today, it is still more or less profitable, and it still commands the highest price for this article in the markets of the world. The competition that has sprung up in the Southwest, however, since the Civil War, greatly reducing the cost of production of rice, has injured the industry in this State, and at this time special efforts are being made by the State Department of Agriculture to find some means of reducing the cost of production of Carolina rice on the coast, with a view to the reëstablishment of the industry.

The principal competition has come from the States of Louisiana and Texas. In the last ten years these two States have increased the acreage devoted to rice to such an extent that they now furnish nearly three-fourths of all of the product in the United States.



HARVESTING OF RICE ON CREIGHTON PLANTATION.

For fifteen years prior to 1861 the annual production of rice in North Carolina, South Carolina and Georgia had averaged more than 105,000,000 pounds of cleaned rice, and of this, South Carolina produced more than three-fourths. There has never been a full restoration of the industry since the war. From 1886 to 1880, inclusive, the annual production of the three States averaged a little less than 41,000,000 pounds, of which this State produced more than one-half. Since 1880 the average annual production of these three States has been, in round numbers, 46,000,000 pounds of cleaned rice, of which North Carolina produced 5,500,000, South Carolina 27,000,000 and Georgia 13,500,000. The average crop in Louisiana since 1880 has been about 86,000,000 pounds of cleaned rice. The methods of cultivation and handling in Louisiana are totally different from what they are in South Carolina, and there today the cost of production is very much less than it is in South Carolina, all things considered. However, the quality and price of the South Carolina product is still the best in this country, and it is a curious fact that Anderson County, in the Piedmont, with its yield of upland rice per acre still holds the world's record.

History.—"Rice is a word," the investigator tells us, "that preserves its etymology through all human speech. From the Sanskrit through the Persian, Greek, Latin, Spanish, French, to contemporary English, it has kept its root unchanged. It is a cereal of the grass family, known as *Oryza Sativa.* It is an annual, reaching two to five feet at maturity. It is indigenous in certain parts of India and in tropical Australia.

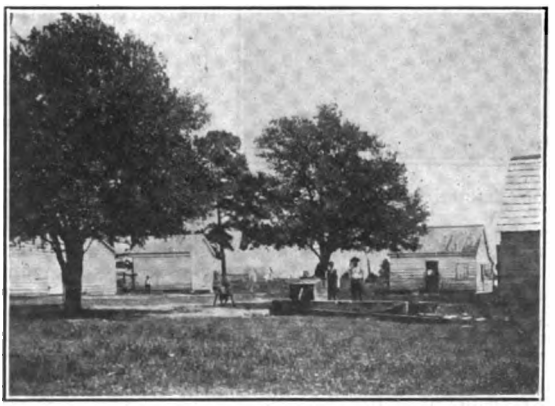
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"There is no record of its nativity in Egypt, Persia, Greece, or Rome. So far as is known, it is the first cereal used by man. Probably the Aryans carried it with them in their migratory marches from the cradle of the human race, in the earliest dawn of history. We know that it was introduced into China about 3,000 years before Christ. We know that it was grown in the valley of the Euphrates 500 years before Christ; that the Arabs took it to Spain, and sustained by its marvelous nourishment, planted their victorious banners everywhere. The Moors called it *Aruz;* the modern Spaniard still calls it *Arroz.*

"It was introduced into Italy in 1468. Sir William Berkeley first cultivated it in Virginia in 1647. Today it is grown as the staple article of food by the millions of India, Siam, China, Japan and Africa. In the Mediterranean countries, and in the tropical and semi-tropical regions of North and South America, it is cultivated as a principal means of subsistence."

Most Important of Cereals.—"Rice is not only the most important of all the cereals, but by far the most important of all food products. It is almost the exclusive diet of 57 per cent. and the principal support of nearly 75 per cent. of the human race. Not only is it the most extensively used and the most widely distributed of the world's foods, but it is the food, *par excellence,* that produces the greatest amount of muscular energy and physical endurance. Rice is the chief diet of the wonderful Japanese soldiery, whose strength and prowess compel the admiration and wonder of mankind today. It is eaten almost exclusively by the Indian and Chinese coolies, those marvelous human machines who can carry a load all day, under a burning sun, that would stagger an American or European; who can carry that load at a speed sufficient to tire a horse; and who accomplish labors that no meat-eating Caucasian could begin to perform. The main reason for the superiority of rice over all other forms of foods is its ready digestibility, plain boiled rice being assimilated in one hour, while the other cereals, legumes and meats, and most vegetables, require from three and one-half to five hours. Rice thus enables a man to economize fully 75 per cent. of the time and energy expended in the digestion of ordinary food, setting it free to be used in his daily vocation, in the pursuit of study, or social duties, and in the case of invalids and people of enfeebled vitality, adding it to the reserve force of the system. The perfect digestibility of rice makes it exceedingly valuable for a weak digestion. A rice diet is generally prescribed for any inflammation of the mucous membrane—whether of the lungs, stomach, or bowels. With meat, fish, milk, cheese, or beans, cooked in the proper proportion, it makes a perfect nutritive diet."

Its Growth in America.—A recent bulletin on rice issued by the United States Department of Agriculture touches upon the history of its introduction into this country in this way:



ARTESIAN WELL IN BARNYARD ON CREIGHTON PLANTATION.

"Rice was probably an article of food in Asia in prehistoric times. It is known that the Chinese have used it for nearly fifty centuries, and in India, too, its use antedates authentic history. It was introduced into Europe in the fifteenth century, when it was taken to Italy and Spain from Northern Africa, where it had been planted by the Mohammedans in their migration from Asia Minor. In 1647, Governor Berkeley, of Virginia, planted some seed rice received from England, but the experiment was not a success, and it was not until 1694 that rice-growing was really established in this country. In that year the Governor of South Carolina planted some rice given him by the master of a trading vessel which had put into Charleston on a cruise from Madagascar. The seed grew well, and in a few years rice-planting on the lowlands of the coast became one of the chief industries of South Carolina. From this State the cultivation was extended to North Carolina and Georgia, and later to

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Florida, Alabama, Mississippi and Louisiana. The French who settled about New Orleans, and the Acadians of Southwestern Louisiana, cultivated rice in a primitive way in the latter part of the eighteenth century, but the methods of growing were so crude that the industry did not become commercially important until after the Civil War. The conditions resulting from the Civil War gave considerable stimulus to the planting of rice as a staple crop in Louisiana along the Mississippi River, and impoverished planters, who had formerly relied on other crops requiring great outlay of capital, began to grow rice as a means of quick financial relief. For several years the production was small, but it gradually increased.

"Since 1870 there has been a decline in the production of the Carolinas and Georgia as a result of unfavorable climatic conditions, and the fact that improved machinery cannot be used on the poorly drained fields.

"In 1896 the problem of irrigating the barren prairies of Southwestern Louisiana and Southeastern Texas was solved at Crowley, in Acadia parish, and a new era in rice culture opened. By means of powerful pumps water is now lifted and forced along elevated ridges through great arterial systems of canals, from which the low-lying fields can be flooded at will. In many cases, also, irrigation is effected by means of artesian wells.

"The adoption of modern machinery for cultivating and harvesting the grain quickly followed the introduction of the extensive irrigation systems, since the buoyant prairie soil, which can be easily and thoroughly drained, makes the use of machinery possible. Extensive areas can now be cultivated and harvested with a small expenditure of labor and with economical production and larger profits insured.

"The development of the industry in the coastal prairie belt of Louisiana and Texas, where a few years ago land could be obtained at from $1 to $5 an acre, has been so great that the commercial crop for this district in 1904, as reported at the census of 1905, was more than 95 per cent. of the whole crop of the United States.

"In the Atlantic States the grain is cut by the sickle, cured, and threshed in a stationary machine, which prepares the grain for milling. In Louisiana and Texas the rice is harvested and threshed in the same manner as wheat in the Western States. As it comes from the thresher it is packed in 4-bushel sacks."

South Carolina's Mills and Products.—South Carolina has four custom rice mills, which received in tolls in 1905 $76,885. The rough rice milled in 1905 amounted to 28,552,860 pounds, valued at $481,401, all domestic. This netted 17,825,732 pounds of clean rice, worth $527,686, of which 13,677,357 pounds was whole, worth $447,721. The bran was worth $18,460, the hulls and waste $1,447, and the polish $6,915. The amount of rice broken in milling is less in South Carolina than in any of the other rice-producing States. The rice mills of South Carolina have a capital of $317,394.

STATISTICS OF RICE.

Year.	Acreage.	Production. Bu.	Value.	Av. Val. per Acre.
1906	19,036	418,792	$418,792	$22.00
1905	18,114	470,964	499,222	.....
1904	33,300	832,500	557,775	$16.75
1900	77,657	47,360,128 lbs.	.....	.....

The 1907 acreage is slightly increased, and so with the production; the price remains about the same.

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THE 1900 RICE CROP.

	Acreage.	Production in Pounds.		Acreage.	Production in Pounds.
The State	77,657	47,360,128	Clarendon	1,432	358,342
Coast Counties:			Darlington	397	95,820
Beaufort	9,361	7,864,612	Fairfield	14	7,960
Berkeley	9,212	5,740,098	Florence	1,119	205,164
Charleston	2,641	2,034,744	Greenville	28	8,512
Colleton	13,846	11,319,208	Greenwood	1	144
Dorchester	2,612	714,594	Kershaw	761	248,276
Georgetown	14,157	10,259,430	Lancaster	4	1,530
Hampton	5,130	3,383,572	Lexington	804	276,612
Horry	1,945	666,454	Marion	310	107,862
Williamsburg	2,206	471,826	Marlboro	60	17,458
Other Counties:			Newberry	49	20,236
Abbeville	1	496	Oconee	1	70
Aiken	234	94,726	Orangeburg	7,333	2,266,162
Anderson	3	1,380	Pickens	35	7,604
Bamberg	1,099	307,950	Richland	435	134,736
Barnwell	767	260,482	Saluda	1	170
Cherokee	1	24	Spartanburg	32	21,364
Chesterfield	14	5,756	Sumter	1,616	386,554

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5

World's Record and other Noteworthy Crops

GENERAL.—This State has held the world's record for the growing of corn per acre, as far as human memory and records go, notwithstanding South Carolina has never been one of the great corn-producing States. During the year 1906 the last capture of the first prize in such a contest was made. This State also holds wonderful records for the growing of grains, and for the production of cotton per acre, and today, as it has ever done, the quality of the South Carolina cotton, particularly Sea Island long staple, ranks well above the average of the cotton belt. In 1906, in the national contest, South Carolina captured the second prize for the growing of oats, and in reality made the ranking yield, but a storm destroyed much of the yield during harvest. In presenting the facts as to some of these noteworthy yields considerable detail has been given in order that those interested in the betterment of agricultural conditions might benefit from the experience of others.

THE PARKER YIELD OF CORN.—The first record yield of corn per acre was made in the year 1857, when Dr. J. W. Parker, at the time superintendent of the State Lunatic Asylum, on a piece of land then and since known as the "Asylum Farm," about one mile north of Columbia, made "the largest crop per acre ever obtained anywhere: from two acres he gathered 359 bushels, and one acre gave 200 bushels and 12 quarts."

CAPT. DRAKE'S WORLD'S RECORD.—The Parker record stood unchallenged until the year 1889, when the *American Agriculturalist's* contest in corn growing, open to the world, took place. In this contest Capt. Zachariah Jordan Drake, of Marlboro County, in this State, won the grand prize. The "Book of Corn," the standard authority in the United States on corn growing, thus tells of this yield: "From a single acre Mr. Drake grew 255 bushels of shelled corn, or 239 bushels of crib-cured corn. Late in February, 1,000 bushels of stable manure and 500 pounds each of manipulated guano, cottonseed meal and kainit were broadcasted on the acre and then plowed under. Following the plow 600 bushels of whole cottonseed were strewn in the furrows. A subsoil plow was run through a depth of twelve inches. The land was well harrowed and the rows planted alternately March 2 three and six feet apart. An improved strain of the common gourd variety of Southern white dent corn was planted, five or six kernels being dropped to each foot of the row. It was planted in the rows five inches deep, but covered only one inch. At the first hoeing the plants were thinned to one stalk every five or six inches, the missing spots replanted. On April 20 the six-foot spaces were plowed and a mixture composed of 200 pounds each of guano, kainit, cottonseed meal, acid phosphate and bone was applied and hoed in. On May 15 the three-foot spaces were plowed, 300 pounds of nitrate of soda sown and worked in. On May 25, 200 pounds of guano were applied in the wide spaces. Another application of 500 pounds of guano, cottonseed meal and kainit was put on June 8, and 100 pounds nitrate of soda June 11. The crop was harvested November 25, before several reputable witnesses. It yielded 17,407 pounds of corn in the ear, of which 140 pounds was soft corn. Several tests showed that 100 pounds of ear corn yielded 82 pounds of shelled corn, which made the yield 254 bushels, 49 pounds of shelled corn at 56 pounds to the bushel, which, kiln-dried, to contain only 10 per cent. of water, would contain 239 bushels."

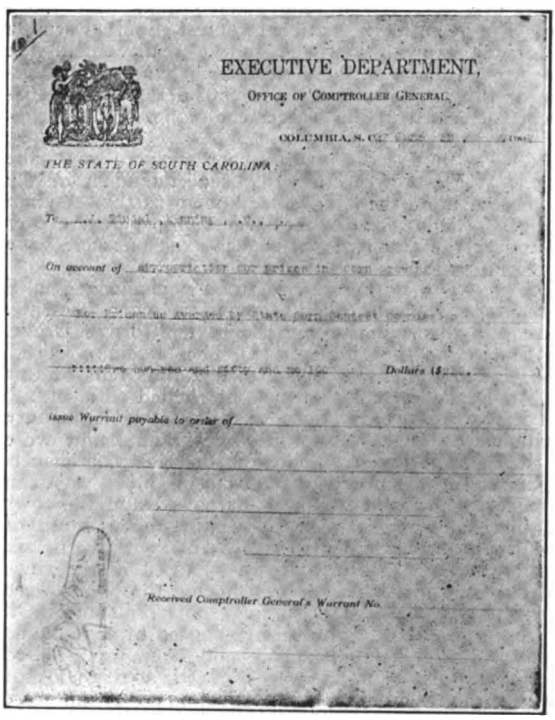
Capt. Drake's crop contained 82 per cent. of shelled corn, had 85 per cent. of dry matter in the corn, and 87 per cent. of dry matter in the cob. The green

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weight in bushels of shelled corn was 255 bushels, the crib-cured weight 239 bushels, and the chemically dried weight 217 bushels. The total expenses were $264, and the value of the unexhausted manure $158. The net expenses, per bushel, amounted to 44 cents, and the feeding and manurial value of the crop was $182.

In this contest Alfred Rose, of Yates County, N. Y., won second prize with 213 bushels against Captain Drake's 255; George Gardner, of Nebraska, was third with 171 bushels, and J. Snelling, of Barnwell County, S. C., was fourth with 131 bushels.

MR. TINDAL'S WORLD'S RECORD.—No further attempt at a contest, open to the world, was made until the year 1906, when the *American Agriculturalist* undertook to repeat, but with more attention to detail, the contest of 1889. This contest was participated in freely by South Carolina growers in competition with growers from all parts of the country. It was conducted not alone under the auspices of *The Agriculturalist*, but also under a State Commission consisting of the Commissioner of Agriculture, the President and the Professor of Agriculture of Clemson Agricultural College, and the General Assembly provided for separate prizes. The contest was won by Mr. A. J. Tindal, of Clarendon County, S. C., a young farmer who had been educated at Clemson College. His yield was 182 bushels of shelled corn. The crop was scored by points and the score was as follows, the possible number of points being in parentheses: Purity and selection of seed 7(10), methods of culture 25(25), record or reports, its clearness, completeness, accuracy, care bestowed upon it, etc., 10(15), yield of contest acre 25(25), quality of crop, market grade, salability, feeding value, etc., 10(10), profits resulting from the entire operation 15(15)—92(100).


EXECUTIVE DEPARTMENT.

OFFICE OF COMPTROLLER GENERAL.

COLUMBIA, S. C.

THE STATE OF SOUTH CAROLINA:

To

On account of

Dollars ($

issue Warrant payable to order of

Received Comptroller General's Warrant No.

THE WARRANT PAYING TO MR. TINDAL HIS STATE CONTEST PRIZE MONEY.

The second prize in this contest went to A. J. Doore, of Butler County, Iowa, with 131 bushels, and the third to B. E. Moore, of Marlboro County, S. C., with 125 bushels. The sixth, seventh, eighth, eleventh, twelfth and thirteenth prizes went to South Carolina farmers.

Prof. Thomas Shaw, who is perhaps the world's most noted grain expert, and who has made a full review of the conditions under which the crop was grown, was the chief of the judges who passed on the competing crop yields. This report reads:

"The acre of corn grown by Mr. Tindal produced a remarkable yield. It made him the winner of a $100 prize (not including State prizes). The corn was grown on land possessed of a cash value of $30 per acre. The soil, rather low and naturally wet, was humus in its composition, at least, to a considerable extent, chocolate in color, and was underlaid at a depth of about two feet by mixed gravel and pipe clay of a non-receptive character.

"The soil was naturally enriched by washing from the surrounding soil and had also been highly fertilized during the three previous years. It had in it one open and some branch drains that were covered. In 1903 600 pounds of guano with a composition of 4.8.4, gave a return to 1,827 pounds of seed cotton. In 1904

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600 pounds of 4.8.4 guano and 60 pounds of nitrate of soda gave 132 bushels of corn and nine bushels of cowpeas. In 1905 600 pounds of guano, 100 pounds of nitrate of soda and 30 pounds of nitrate of potash gave a yield of 3,912 pounds of seed cotton.

"On April 5, 1906, the ground was ploughed to the depth of fourteen inches and the same day was cross-ploughed and subsoiled to the depth of twenty inches, using a ten-inch turning plough, and the subsoil plough run in every furrow was home-made. Immediately after, the same day, a spring-tooth harrow was run over the acre to the depth of three inches, and also a smoothing harrow. On April 16 it was similarly harrowed and the harrow was at once followed by a smoothing harrow. On May 7 it was harrowed in precisely the same way as on April 16.

"The fertilizer applied was as follows: 600 pounds of complete special guano, containing 4 per cent. ammonia, 8 per cent. phosphoric acid, and 4 per cent. potash; 500 pounds of cottonseed meal with a composition of 7.1½ and 1; 500 pounds of Peruvian guano with a composition of 8.8.5 and 2; and 400 pounds of nitrate of soda with 18 per cent. of ammonia. The first three fertilizers were applied in a furrow on May 7, at the time of the planting of the corn, and the fourth was given as a top dressing on June 15. One man with mule and plough opened the furrows and three men applied the dressing by hand. The cost of the fertilizers before application was $32.45 for the acre.

"The variety planted was the Marlboro Prolific, grown by the owner, who in 1900 introduced the variety into the neighborhood. The seed was planted in rows that were made with the shovel. The kernels were buried three inches deep in a well-prepared soil, and one inch apart in the line of the row. The rows were thirty-three inches distant and twenty-eight quarts of seed were used, the germination of which was considered perfect. The weather was dry until June 10, and was then over-wet.

"Expenditures were:

Interest on land at 6 per cent	$ 1 80
Cost of ploughing	5 00
Cost of harrowing	1 00
Other labor in preparing land	1 00
Cost of fertilizers	32 45
Cost of applying fertilizers	1 00
Cost of seed	50
Cost of cultivating	2 50
Cost of other work	1 50
Cost of harvesting	9 80
Total cost	$ 56 55

"Receipts were:

182 bushels corn at $2.00	$364 00
3 tons stover at $6.00	18 00
4,100 pounds fodder at $20.00 per ton	41 00
Total receipts	$423 00
Net profit	$366 45

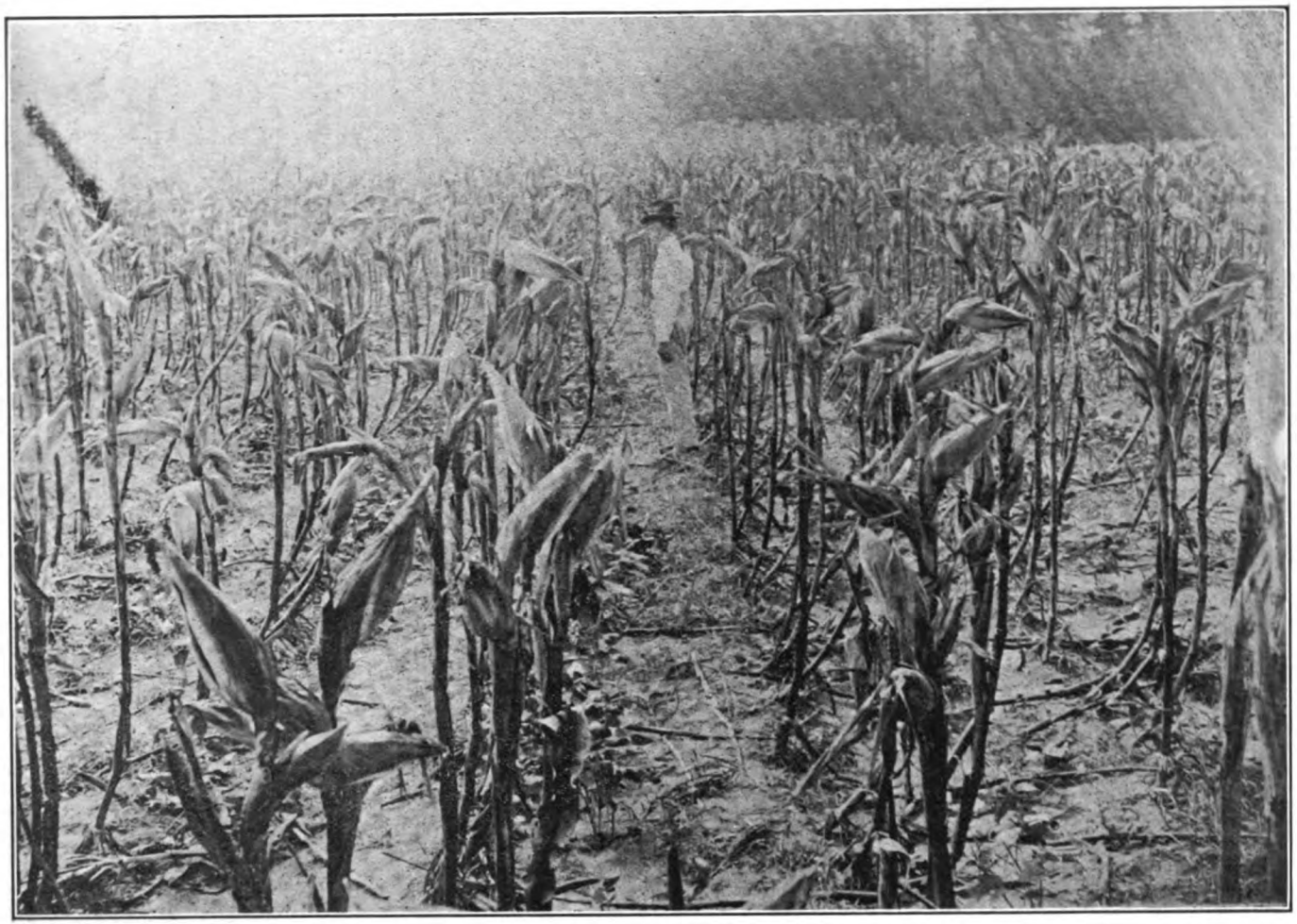
"On May 16 a weeder was run over the corn to the depth of two inches. It was cultivated May 22 and June 2, with 16-inch sweeps running to the depth of about one inch. On May 30 the crop was thinned by hand to the distance of four to six inches between the plants and weeds were removed. One day with three men was occupied in the hand work.

"On August 27 the tops were cut off and the fodder stripped from the ear down. On November 30 the crop was harvested by plucking the ears. The same day the stubs of the stalks were cut by hand and shredded. The yield of the corn was 182 bushels, giving an average of 86 per cent. corn to cob.

"The profit of $366.45 seems large, indeed, from one acre of land, but it will be noticed that in reaching it the entire crop is valued at $2.00 per bushel, on the assumption that it will all make good seed. For that purpose forty-eight bushels had been sold when the manual was filled out in the autumn of 1906. The fodder, which, I understand, means the tops and leaves, is valued at $20.00 per ton.

"To a Northern man this seems a very large valuation. But suppose the entire crop is valued at 50 cents per bushel for feeding, and the straw and fodder together at $5.00 per ton. These would be worth the figures named in any part

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VIEW OF THE CORN FIELD OF ONE OF THE PARTICIPANTS IN THE NATIONAL CONTEST.

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of the United States; the net profit from the acre would still be $44.45, or considerably more than the land is worth. In my judgment, the State of South Carolina should give Mr. Tindal a medal for what he has done. His achievement is simply wonderful, and the lessons from it are many. They include the following:

"He has brought into bold relief the wisdom of keeping land in a high state of fertilization, as in 1903-'04-'05 he got good returns from high fertilization.

"He has demonstrated the great value of deep and thorough cultivation in Southern soils when preparing them, and of pulverizing finely before planting.

"He has shown that a farmer must not be afraid to put on a little hand labor when growing crops that will be benefited by it.

"He has made it clear that to obtain maximum yields of corn the stand must not be thin or irregular. His crop was grown more closely than corn is usually grown, but, of course, on some soils it may be necessary to plant somewhat more distant.

"He has shown that in the South a farmer may apply fertilizer that costs him more than his land is worth, and yet make a good return for the investment.

"He has demonstrated that a Southern farmer may make enormous profits from growing seed corn.

"Finally, he has shown that in these United States we are only in the A. B. C. of possible production of grains."

Professor Shaw, in a separate article, has the following to say:

"No feature of the reports has surprised me more than the high value put upon corn fodder by contestants living in the South. Mr. A. J. Tindal, for instance, of Manning, S. C., had his corn cut down to the ears and the fodder stripped off. The weight thus obtained from an acre, presumably cured, was 4,100 pounds. This he valued in his report at $20.00 per ton. The corn fodder, presumably the lower part of the stalk, was shredded. Three tons were obtained, and this was valued at $6.00 per ton. These facts speak loudly as to the great difference in the estimate of the value put upon corn fodder in the South and in the corn belt, where millions of acres go back every year to earth ungathered. It would seem scarcely possible that such a difference could exist in the same country.

"That millions and millions of acres of this product should go to waste every year in the United States must appear strange to the foreigner. That so much should be wasted is indeed a stigma upon our agriculture, but it is a stigma that yields its ground very slowly. One acre of corn stover properly cured and fed is worth as much, on the average, as one acre of timothy hay. The food thus grown on 1,000,000 acres of corn in the stover is worth as much as the food grown on 1,000,000 acres of timothy hay. The waste of 1,000,000 acres of corn fodder is, therefore, equal to the waste of 1,000,000 acres of timothy hay.

"It may be answered that live stock get some of the fodder while grazing in the fields. They do, but more of it they do not get, and all of what they get is impaired in quality."

Another State contest is being conducted in South Carolina during 1908.

Four Bales to the Acre.—There have been many instances of very large yields of upland cotton in different portions of South Carolina. One of the most conspicuous is that of Hon. E. D. Thompson, of Point, York County, who raised four bales on one acre in 1897. Over his own signature Mr. Thompson told the story of this crop in a communication to the Yorkville *Enquirer*, in November of the year named, as follows:

"Having finished the gathering of the crop off of my pet acre of cotton, I will now, in compliance with your request made to me some weeks ago, endeavor to give you a history of the experiment.

"To begin with, the plot of land was stepped off by one of my neighbors as follows: First line, 86 yards; second line, 65 yards; third line, 60 yards; and fourth line, 65 yards, enclosing a total of 4,910 square yards of dark gray land with yellow subsoil.

"Now, to go back a little. Two years ago (in 1895) this plot was fertilized with 500 pounds of soluble guano and planted in corn. The yield was between forty and fifty bushels. Last year (1896) it was fertilized with sixteen two-horse loads of lot scraping, scattered broadcast, and 1,000 pounds of soluble guano, Charlotte acid and German kainit placed in drill. After this, it was planted with King cotton, and the yield was 846 pounds of lint.

"About the middle of March, of the present year, I made a compost heap, consisting of fifty bushels of cottonseed, six two-horse loads of stable manure, 800 pounds of Charlotte acid and 200 pounds of kainit. After a thorough mixing, these materials were covered with rich earth and left in a low, flat heap until

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the 15th of April, when, after having turned out the old stalks and smoothly harrowed my acre, I spread over it the contents of the compost heap, as evenly as possible, and then turned it under to a depth of from six to eight inches, after which I again used the harrow to level and pulverize the land.



VIEW OF CORN IN FIELD OF 100 ACRES, YIELDING 70 BUSHELS PER ACRE.

"With the manure in and the land thoroughly pulverized, I next took a terrace level, ran a line directly through the center of the plot, and from this line, each way, laid off the rows four and one-half feet apart from center to center. Then, in the furrows, I drilled 700 pounds of equal parts of soluble guano, Charlotte acid and kainit, and after that, with a six-inch steel shovel, I prepared the land in low flat beds for planting.

"The seeds used were what might very properly be called Further Improved King. They consisted of 100 pounds carefully selected from the best bolls off the best stalks that grew on the same land the year before.

"On the 20th of May, I side-harrowed the acre, and two days afterward went over it again, and, by hand, pulled it up to one stalk to every six or eight inches. This work I did myself, in order to be sure that it was done right, and also that I might be assured that there was nothing left but healthy, vigorous stalks.

"On the 27th of May I side-harrowed again, and on the 1st of June thinned to eighteen inches in the drill. Next, on the 10th of June, I sided with a short straight shovel and twelve-inch bow, and on the 22nd I sided again with a larger shovel and sixteen-inch bow. Then, on the 15th of July, I hoed and run three furrows with shovel and eighteen-inch heel scrape. Last, on the 28th of July, I went through the middles as deeply as I could with a bull tongue, or scooter, and then, on the same day, 'laid by' by leveling off with shovel and heel scrape.

"The work of picking, ginning and packing has just been completed, with a total yield of four bales, weighing respectively 430, 441,.453 and 398 pounds, in all 1,722 pounds of lint on the acre.

"Now, Mr. Editor, I know that this is a phenomenal yield of cotton to be gathered from one acre, and many of your readers will doubt this report. I have not got anything to say to Thomas; but to others who believe in the possibility of things that they themselves have never seen, I beg to say that what I have done is nothing more than they can do if they will use the means. Let them select the right kind of seed, fertilize their land well, work it properly, and my word for it they will be gratified at the result.

"As for myself, I have been using the King variety for some time past. I am not prepared to say that the King is superior to all other varieties for all kinds of soil; but in this climate, on highly fertilized lands, I think the King beats any other variety.

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"While my success this year has been in a large measure due to the seed—probably I owe more to the seed than anything else; still I think that the deep furrow at the last working had much to do with the yield. My opinion here is based on past experience. I have several times before gathered two bales from one acre, and each time there was a considerable quantity of fruit which failed to mature. Some of it rotted, and some of it dried up. Anyhow, it did not open. I began to think it was impossible to cultivate or fertilize so as to get more than two bales. The trouble seemed to be that after a certain point, the stalks would become so large and the foliage so dense as to necessarily cause the moulding and rotting of the lower bolls.

"But in the King variety this trouble is, is a large measure, overcome. Owing to the natural habits of the plant, dwarf growth and early maturity, the stalk does not grow as large under same conditions. It puts on more fruit to the size than any other variety of which I have any knowledge, and while the foliage is all sufficient to give the stalk a healthy growth, yet this foliage is not so dense, even under the stimulus of high cultivation, and this year I noticed but very little trouble on account of the rotting of the early bolls.

"This year the cotton on the acre referred to above bloomed at least two weeks earlier than ordinary varieties. It has been earlier every year. It has also



AN ARTIST'S WAY OF ILLUSTRATING SOUTH CAROLINA'S SUPREMACY IN CORN GROWING.

matured earlier. Heretofore I have neglected the deep furrow already described. The effect of that furrow has certainly been most noticeable. The cotton kept on maturing almost as late as other varieties, and I think the deep furrow was largely the cause of it. The furrow deepens the feeding roots and gives greater vitality.

"Then another thing. Although I have referred to this cotton as a dwarf variety, I wish to be understood only that it has dwarf tendencies and characteristics under ordinary circumstances. During the present fall I have picked white cotton a foot above my head, or six and one-half feet from the ground.

"In conclusion, let me say also that I have written this account only because you asked me for it, and that my object is the same as yours, to disseminate information. I have no cotton seed on hand except the King variety, and am selling them to my neighbors at 15 cents a bushel. I do not wish to sell the seed from my pet acre at all. If, however, any individual should be especially anxious for a few of these seeds, and will forward the stamps to cover postage (12 cents) I will be pleased to send him a pound by mail; but I have only a limited quantity to dispose of on this basis, and would not care to send more than a single pound to any one individual."

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Record Yield of Oats.—Not only did South Carolina's farmers participate in the National Corn Contest, in 1906, but they were also represented in the National Contest for the growing of oats per acre. It has been a source of pride to the agricultural interests in the State that notwithstanding this crop was not planted with a view to this contest, but was entered after the contest had begun, that E. C. Haynsworth, of Sumter, S. C., took the second place when the awards were finally made. This was accomplished, also, under the most unfavorable weather conditions, severe storms occurring about the time the oats were ready for harvesting, and doing great damage, as may be seen from the accompanying picture of one of the fields entering in this contest, which was practically a total loss, though promising up to the time of the storm to far surpass the yield that finally won the prize. Mr. Haynsworth's actual yield of oats on one acre was 108 bushels, measuring 32 pounds to the bushel. The first prize was won by V. D. O'Donnell, of Montana, who harvested 130½ bushels on one acre. The *American Agriculturist* remarked, in making the announcement as to the result of the 1906 contest: "South Carolina thus proves her adaptability to the oats crop as she has done to the corn crop. The best yields of corn in the United States have been grown in South Carolina in the American Agriculturist Contest of 1889 and again in our great competition of 1906." The illustration accompanying shows a stalk of Mr. Haynsworth's oats, which was taken from the field after the harvest and is merely given in order that its height might be seen in comparison with a young man practically six feet tall.



World's Record Rice Crop.—The record for the yield of rice per acre is still held by the crop of Dr. Boyles, of Anderson County, who was a member of the historic Pendleton Farmers' Society. The yield was stated at the time to be 137 bushels on one acre, and this statement has never been successfully challenged. A committee from the Society supervised the measuring of the product.

A Record Yield of Oats.—In 1882 the yield of oats on an acre of land in Lancaster County created national attention. It has been somewhat difficult to obtain accurate information in regard to this yield, but a very clear account is given in the following letter from the son of the farmer who made this record, which has perhaps never been surpassed:

Lancaster, S. C., August 21, 1907.

Your favor of 17th inst. received. I will gladly give you all the information I can, which was derived from my father many years ago.

1. The yield of oats per acre—182 bushels.
2. Kind of oats—Red rust-proof variety.
3. Kind of soil—Gray top soil with red clay subsoil. The lot where the oats were raised contained a fraction over three acres and is the lot now owned by Col. Leroy Springs, upon which is located the Roddey Boarding House.
4. Time of sowing—Early fall in October, 1881.
5. Time of reaping—In June, 1882.
6. Manner of preparation—The land had been planted in cotton for several years previous, and each year had been thoroughly subsoiled by a long subsoil plow drawn by two large mules. Each year lot-manure, manure from the back lots and ditches of the town, as well as stable manure, was broadcasted over the field and plowed under with a two-horse Oliver Chilled Plow. Before the cotton was planted a compost preparation of cotton seed, acid phosphate and stable manure thoroughly rotted was put in the drill, and after the cotton was up, one or two side applications.

At this time the lot was in fine condition, the top soil for eighteen inches in depth being practically "made earth." The spring before the year the oats were planted, I think in May, the field was broadcasted in cow peas, which were cut in the fall. When harvested I remember they resembled a dense mottled wilderness of vines. A two-horse Oliver Chilled Plow was used to turn them in. And it will be noted that the vine as well as the root was turned in. I remember a large heavy log chain was attached to the beam of the plow to drag the vines down to prevent the plow from clogging.

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7. The manuring—This has been partly answered under six (6) above. After the pea vines had been plowed under, lot and stable manure were broadcasted over the field and plowed under.

Six bushels per acre were planted in the following manner: A man went across the field sowing two bushels with the hand, then came back in opposite direction with two bushels more, and then went perpendicularly across the field with the two remaining bushels. The oats grew to a height of six feet. They were cut with a cradle by hand. I remember that there was only one hand who continued work in reaping, and he could not make a full sweep with his cradle, as it would be full before he could make a half swing around. The oats were threshed and measured by Mr. W. McD. Brown, of this place, and Mr. Wm. L. Edwards (now dead), who owned the thresher. The large yield created a sensation at the time, and was written up by the papers. It was also made a matter of record in the office of the Clerk of Court of this county.

I regret that I cannot give you an approximate amount of the cost of raising the oats, but I am confident there was a handsome profit in the yield.

The yield was made by my father, the late Col. John D. Wylie, who was State Senator from Lancaster County at the time. My father was a practicing attorney at the time, but was farming at the same time.

The year 1882 was a fine crop year, not only for oats, but for cotton, corn and other grain as well. A reliable farmer of this county told me yesterday that he made that year (1882) thirty-five (35) bales of cotton with two mules.

R. E. Wylie.

Since the above letter was written, a more complete investigation as to the facts in regard to Capt. John D. Wylie's oat yield has been made. It has been found that the yield was made in the year 1882 and was 182 measured bushels, which would be equivalent to over 200 bushels by standard weight. The yield was so remarkable that the committee which made the report had the facts recorded in the office of the Clerk of Court in Lancaster County. The affidavit of this committee, which was signed by Daniel W. Brown and W. L. Edwards, cannot at this time be found, and it is understood that it was subsequently removed from the office of the Clerk of Court of Lancaster County and forwarded to the then existing Department of Agriculture at Columbia. This Department having been abolished a number of years ago, its records became scattered, and in this way, no doubt, the affidavit was lost. However, there remains a record that amply sustains what Mr. Wylie writes of his father's celebrated crop.

In the Lancaster *Ledger* (now extinct), June 14, 1882, is found this item: "The largest yield of oats to the acre in the United States, or the world, is the crop threshed out by Col. J. D. Wylie last week. On 3½ acres, measured by actual survey, he harvested 634 bushels. The oats weighed 37 pounds to the bushel. The aggregate in commercial bushels 733 1-16 bushels, or 209 25-56 bushels to the acre. We defy the world to beat this! The field was seeded with eight bushels to the acre."

A Trucking Record.—Two young men from Rhode Island, the Whipple Brothers, made a record, during the year 1906, in truck raising on their small place of 36 acres at Beaufort. They first planted the place in radishes, took off the crop and planted again in radishes, realizing $10,000 net from the two crops. Later, on the same ground, during the same season, they planted and secured a crop of peas, following that with cucumbers, making a good yield. After the cucumbers had gone they planted the entire place in corn and made over 50 bushels to the acre. It is thus seen that five crops in rotation were gathered from the same ground in one year. These young men knew very little of farming at the outset.

Some Other Results.—In 1906 a Bamberg County farmer, on a medium-sized farm, raising cantaloupes for the Eastern markets, netted the handsome sum of $15,000.

Splendid returns are to be had from poultry-raising for the local and Eastern markets, the profits from which average 400 per cent.

Here is the record of one truck farm in Charleston County during 1905: Irish potatoes, 22 acres, value product, $3,300; sweet potatoes, 12 acres, value product, $1,500; cabbage, 17 acres, value product, $2,500; lettuce, 6 acres, value product, $2,500; cucumbers, 10 acres, value product, $3,000; beans, 15 acres, value product, $2,250; watermelons, 8 acres, value product, $800; cantaloupes, 3 acres, value product, $450.

A planter in Barnwell County in 1905 made $12,000 on 160 acres of cantaloupes, and another in Charleston County made $200 per acre. In Saluda County an asparagus planter in 1905 made $2,200 on 16 acres.

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Irish Potatoes.—In Lancaster County, during the season of 1907, Col. John N. Crocket, by intelligent cultivation, gathered 820 bushels of Irish potatoes on one acre.

Red Clover.—Another record that stands conspicuous in South Carolina agricultural history is the yield of red clover obtained in 1801 by Col. Hill, of York. He gathered 48 tons of red clover from 18 acres of land.

Oats.—Capt. A. H. White, of Rock Hill, in 1884 harvested 1,012 bushels of oats from 16 acres and sold the crop at 75 cents a bushel. He sold one-half the straw for enough to pay all the expenses of preparing for the crop and harvesting it.

Irish Potatoes.—Capt. Lewis M. Grist, of York County, in 1883 made 110 bushels of Early Rose Irish potatoes on one-eighth of an acre. On another one-eighth of an acre adjoining the potato patch he had sufficient alfalfa to furnish green food for a horse and a cow during the springs and summers of several years.

Successful Corn Planting.—With this chapter is presented a picture entitled "Good Corn," which was grown during the 1907 season on the place of W. B. Plyler in Lancaster County. Before the crop had been harvested, Mr. Plyler wrote as follows in regard to it, the field consisting of 16 acres:

"First, I had the land broken with a two-horse plow and well harrowed. Then I had rows laid off five feet apart, putting in one hundred pounds of fertilizer per acre, planting the corn (Marlboro Prolific) two feet apart in the row. In less than two months from the time of planting the corn was 'laid by,' having been plowed three times. With the second plowing one hundred pounds of fertilizer was applied per acre and also with the last plowing. Plowing was done with cultivators and land kept level. The field will average from two to three large ears of corn to each stalk, and the lowest estimate as to yield is 1,000 bushels, or an average of 50 bushels per acre." The final result was 75 bushels per acre when measured.

THE WILLIAMSON CORN METHOD—Conspicuous in the State's agricultural development of the past few years has been the introduction of the "Williamson Plan" for the cultivation of corn. It is here explained by Mr. Williamson himself:

For a number of years after I began to farm I followed the old-time method of putting the fertilizer all under the corn, planting on a level or higher, six by three feet, pushing the plant from the start and making a big stalk, but the ears were few, and frequently small. I planted much corn in the spring and bought much more corn the next spring, until finally I was driven to the conclusion that corn could not be made on uplands in this section, certainly not by the old method, except at a loss.

I did not give up, however, for I knew that the farmer who did not make his own corn never had succeeded, and never would, so I began to experiment. First, I planted lower, and the yield was better, but the stalk was still too large; so I discontinued altogether the application of fertilizer before planting, and knowing that all crops should be fertilized at some time, I used mixed fertilizer as a side application, and applied the more soluble nitrate of soda later, being guided in this by the excellent results obtained from its use as a top dressing for oats. Still, the yield, though regular, was not large, and the smallness of the stalk itself now suggested that they should be planted thicker in the drill. This was done the next year, with results so satisfactory that I continued from year to year to increase the number of stalks, and the fertilizer with which to sustain them; also to apply nitrate of soda at last plowing, and to lay by early, sowing peas broadcast. This method steadily increased the yield, until year before last (1904), with corn eleven inches apart in six-foot rows, and $11.00 worth of fertilizer to the acre, I made eighty-four bushels average to the acre, several of my best acres making as much as 125 bushels.

Last year (1905), I followed the same method, planting the first week in April seventy acres which had produced the year before 1,000 pounds seed cotton per acre. This land is sandy upland, somewhat rolling. Seasons were very unfavorable, owing to the tremendous rains in May, and the dry and extremely hot weather later. From June 12th to July 12th, the time when it most needed moisture, there was only five-eighths of an inch of rainfall here; yet with $7.01, cost of fertilizer, my yield was fifty-two bushels per acre. Rows were six feet and corn sixteen inches in drill.

With this method, on land that will ordinarily produce 1,000 pounds of seed cotton with 800 pounds of fertilizer, 50 bushels of corn per acre should be made by using 200 pounds of cotton seed meal, 200 pounds of acid phosphate, and 400 pounds of kainit mixed, or their equivalent in other fertilizer, and 125 pounds of nitrate of soda, all to be used as side application as directed below.

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On land that will make a bale and one-half of cotton per acre when well fertilized, a hundred bushels of corn should be produced by doubling the amount of fertilizer above, except that 300 pounds of nitrate of soda should be used.

In each case there should be left on the land in corn stalks, peas, vines and roots. from $12 to $16 worth of fertilizing material per acre, beside the great benefit to the land from so large an amount of vegetable matter. The place of this in the permanent improvement of land can never be taken by commercial fertilizer, for it is absolutely impossible to make lands rich as long as they are lacking in vegetable matter.

Land should be thoroughly and deeply broken for corn, and this is the time in a system of rotation to deepen the soil. Cotton requires a more compact soil than corn, and while a deep soil is essential to its best development, it will not produce as well on loose open land, while corn does best on land thoroughly broken. A deep soil will not only produce more heavily than a shallow soil with good seasons, but it will stand more wet as well as more dry weather.



GOOD CORN IN LANCASTER.

In preparing for the corn crop, land should be broken broadcast during the winter one-fourth deeper than it has been plowed before, or if much vegetable matter is being turned under, it may be broken one-third deeper. This is as much deepening as land will usually stand in one year and produce well, though it may be continued each year, so long as much dead vegetable matter is being turned under. It may, however, be sub-soiled to any depth by following in bottom of turn plow furrow, provided no more of the sub-soil than has been directed is turned up. Break with two heavy plows, if possible, or better, with disc plow. With the latter, cotton stalks or corn stalks as large as we ever make can be turned under without having been chopped, and in pea vines it will not choke or drag.

Never plow land when it is wet, if you expect ever to have any use for it again.

Bed with turn plow in six-foot rows, leaving five-inch balk. When ready to plant, break this out with scooter, following in bottom of this furrow deep with Dixie plow, wing taken off. Ridge then on this furrow with same plow, still

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going deep. Run corn planter on this ridge, dropping one grain every five or six inches. Plant early, as soon as frost danger is past, say first seasonable spell after March 15th, in this section. Especially is early planting necessary on very rich lands where stalks cannot otherwise be prevented from growing too large. Give first working with harrow or any plow that will not cover the plant. For second working, use ten- or twelve-inch sweep on both sides of corn, which should now be about eight inches high. Thin after this working. It is not necessary that the plants should be left all the same distance apart if the right number remain to each yard of row.

Corn should not be worked again until the growth has been so retarded, and the stalk so hardened that it will never grow too large. This is the *most difficult point* in the whole process. Experience and judgment are required to know just how much the stalk should be stunted, and *plenty of nerve* is required to hold back your corn when your neighbors, who fertilized at planting time and cultivated rapidly, have corn twice the size of yours. (They are having their fun now. Yours will come at harvest time). The richer the land, the more necessary it is that the stunting process should be thoroughly done.

When you are convinced that your corn has been sufficiently humiliated, you may begin to make the ear. It should now be from twelve to eighteen inches high, and look worse than you have ever had any corn to look before.

Put half of your mixed fertilizer (this being the first used at all) in the old sweep furrow on both sides of every other middle, and cover by breaking out this middle with turn plow. About one week later treat the other middle the same way. Within a few days side corn in first middle with sixteen-inch sweep. Put all your nitrate of soda in this furrow, if less than 150 pounds. If more, use one-half of it now. Cover with one furrow of turn plow, then sow peas in the middle broadcast at the rate of at least one bushel to the acre, and finish breaking out.

In a few days side corn in other middle with same sweep, put balance of nitrate of soda in this furrow if it has been divided, cover with turn plow, sow peas, and break out. This lays by your crop with a good bed and plenty of dirt around your stalk. This should be from June 10th to 20th, unless season is very late, and corn should be hardly bunching for tassel.

Lay by early. More corn is ruined by late plowing than by lack of plowing. This is when the ear is hurt. Two good rains after laying by should make you a good crop of corn, and it will certainly make with much less rain than was required in the old way.

The stalks thus raised are very small, and do not require anything like the moisture even in proportion to size that is necessary for large sappy stalks. They may, therefore, be left much thicker in the row. This is no new process. It has long been a custom to cut back vines and trees in order to increase the yield and quality of fruit; and so long as you do not *hold back* your corn, it will go, like mine so long went, all to stalk.

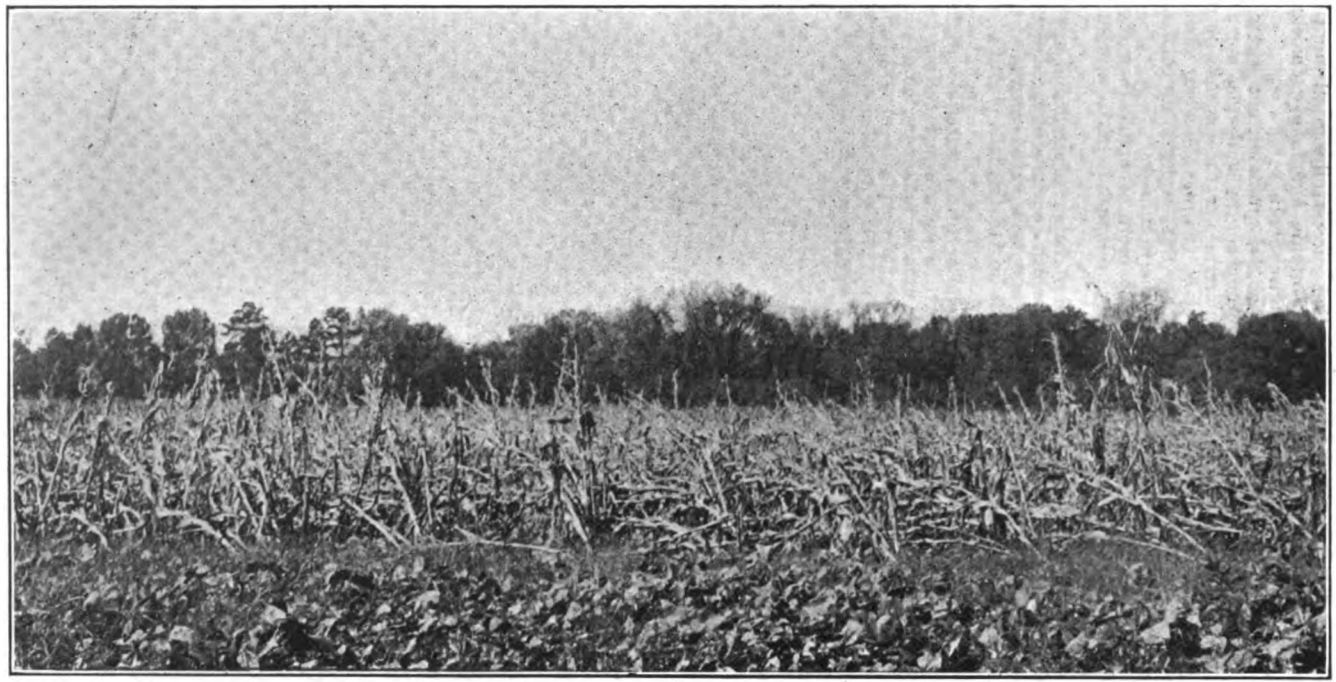
Do not be discouraged by the looks of your corn during the process of cultivation. It will yield out of all proportion to its appearance. Large stalks cannot make large yields, except with extremely favorable seasons, for they cannot stand a lack of moisture. Early applications of manure go to make large stalks, which you do not want, and the plant food is all thus used up before the ear, which you do want, is made. Tall stalks not only will not produce well themselves, but will not allow you to make the pea vines, so necessary to the improvement of land. Corn raised by this method should never grow over seven and one-half feet high, and the ear should be near to the ground.

I consider the final application of nitrate of soda an essential point in this ear-making process. It should always be applied at last plowing and unmixed with other fertilizers.

I am satisfied with one ear to the stalk, unless a prolific variety is planted, and leave a hundred stalks for every bushel that I expect to make. I find the six-foot row easiest to cultivate without injuring the corn. For fifty bushels to the acre, I leave it sixteen inches apart; for seventy-five bushels to the acre, twelve inches apart, and for one hundred bushels, eight inches apart. Corn should be planted from four to six inches below the level, and hid by from four to six inches above. No hoeing should be necessary, and middles may be kept clean until time to break out by using harrow or by running one shovel furrow in center of middle and bedding on that with one or more rounds of turn plow.

I would advise only a few acres tried by this method the first year, or until you are familiar with its application. Especially is it hard, at first, to fully

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VIEW OF ONE OF THE 1906 PRIZE ACRES OF CORN AFTER A DESTRUCTIVE STORM.

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carry out the stunting process, where a whole crop is involved, and this is the absolutely essential part of the process.

This method I have applied or seen applied, successfully, to all kinds of land in this section except wet lands and moist bottoms, and I am confident it can be made of great benefit throughout the entire South.

In the middle West, where corn is so prolific and profitable, and where, unfortunately for us, so much of ours has been produced, the stalk does not naturally grow large. As we come South its size increases, at the expense of the ear, until in Cuba and Mexico it is nearly all stalk (witness Mexican varieties).

The purpose of this method is to eliminate this tendency of corn to overgrowth at the expense of yield, in this Southern climate.

By this method I have made my corn crop more profitable than my cotton crop, and my neighbors and friends who have adopted it have, without exception, derived great benefit therefrom.

Plant your own seed. I would not advise a change of seed and method the same year, as you will not then know from which you have derived the benefit. I have used three varieties, and all have done well. I have never used this method for late planting. In fact, I do not advise the late planting of corn, unless it be necessary for cold lowlands.

The increased cost of labor and the high price of all material and land are rapidly making farming unprofitable, except to those who are getting from one acre what they formerly got from two. We must make our lands richer by plowing deep, planting peas and other legumes, manuring them with acid phosphate and potash, which are relatively cheap, and returning to the soil the resultant vegetable matter rich in humus and expensive nitrogen. The needs of our soil are such that the South can never reap the full measure of prosperity that should be hers until this is done.

I give this method as a farmer to the farmers of the South, trusting that thereby they may be benefited as I have been.

E. McIver Williamson.

In the season of 1907 the Williamson Plan has been practiced generally in South Carolina, and most gratifying results have been obtained, in many instances yields of from 60 to 70 bushels per acre being obtained.

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6

SILK CULTURE

In McCrady's History, after referring to the failure of the Huguenots to establish the manufacture of silk, the details of the attempt of Sir Nathaniel Johnson to develop this industry upon his plantation, "Silk Hope," in what was subsequently St. Thomas' Parish, is given. In 1699 he presented to the Proprietors a sample of silk made by him. In 1707 he was making from £300 to £400 yearly from silk alone. Little negro children were employed to feed the silk worm, and others encouraged by Johnson went into the industry, earning from £40 to £50 per year without interfering with their other avocation. The silk was manufactured into druggets. "As mulberry trees grow spontaneously in South Carolina," says this historian, "and native silk worms produced well-formed cocoons which were often found in the woods, it appears that this country was well adapted to the development of the industry; but though again tried by the Swiss near Purysburg in 1731, and yet again by the French colony near New Bordeaux, Abbeville, in 1764, this manufacture has never been persevered in, 'probably,' says Dr. Ramsey, 'because there were easier modes of making money.'" The silk produced was sent to England.



GANZI COLONY HOME.

Elizabeth Lucas.—Elizabeth Lucas, who was the daughter of Col. Geo. Lucas, an English army officer, devoted practically her whole life to encouraging the people to take to agriculture on all lines, introducing different plants and constantly urging the people to substantial agricultural development. When she married Chief Justice Charles Pinckney in 1774 and went to live at her new home, "Belmont," on Cooper River, she undertook the cultivation of silk. It is chronicled that with her own hands she wound the silk thread that was made by the silk worms at "Belmont." "During a visit afterwards to England," says White, "three silk dresses were made from this thread. One of the dresses was given the mother of King George the Third, and one of them, a shining gold brocade, was worn by Mrs. Pinckney herself when she was received at the Royal Palace. This dress has been handed down to her descendants of the present day."



LABORERS' QUARTERS AT LADSON.

Later Efforts.—Frequently in the early history in South Carolina mention is made of various efforts at silk culture. In fact, immediately after the Revolution efforts at planting mulberry trees for the cultivation of silk were made not

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only in this part of the new nation, but even on up into New England, and Benjamin Franklin was one of the most notable promoters of the movement. It was not until December, 1825, that the subject began to receive national attention, however, and the year following official efforts were made to push the industry. There was considerable activity throughout the United States in this direction until 1839, from which date the efforts seem to have almost entirely ceased until a few years ago. During the period of marked activity there was considerable planting of mulberry trees in South Carolina and some silk growing was done not far from the capital of the State.



COLONY STORES AT LADSON.

Federal Government Aids.—It was in 1901 that Congress authorized silk investigations to be made by the Federal Government. Miss Henrietta Aiken Kelly, of this State, who had long been a close student of sericulture, was employed as a special agent of silk culture in the South. She had been to Lombardy and had carefully studied the subject at the home of the industry. She was charged with the preparation of a manual of instruction on silk culture, which was prepared and published by the Division of Entomology in 1903, entitled "Silk Worm Culture." The Federal Government has followed up the work continuously with a view to establishing the industry in South Carolina, and similarly located sections, has imported and furnished to various persons mulberry trees and silk worms, and has established in Washington a plant for the reeling of the silk.



ONE-YEAR-OLD VINEYARD—GANZI COLONY.



POULTRY DEPARTMENT—GANZI COLONY.

Miss Kelly's Work.—Through Miss Kelly's activity, in which she has had the hearty coöperation of the State Department of Agriculture, Commerce and Immigration, owing to the exact similarity of soil and climate conditions in South Carolina and in Lombardy, several thousand mulberry trees have been planted in this State in the past few years. Miss Kelly brought with her from Italy an expert, a graduate of the Agricultural Department of the University of Turin, and he is still engaged in directing silk culture in the coast section of the State. A number of Eastern silk manufacturers have been watching the demonstration in South Carolina as to the growing of the proper raw material with a view to moving mills to where the raw material is grown successfully.

Present Conditions.—This stage of the development has not at this time been reached. Considerable headway has been made with the growing of silk by an Italian colony located by the Italian Consul at Charleston, near Ladson. In this colony are some seventy-five people, experienced in sericulture, and their trees are doing exceedingly well. About 9,000 mulberry trees were planted and they are growing well. It will take several years for the trees to develop sufficiently for the active prosecution of the work in silk production, and additional women who understand the industry will be needed. These, it is stated, will be obtained at the proper



BARN AT THE GANZI AGRICULTURAL COLONY AT LADSON.

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time. A number of trees have been planted in the vicinity of Bamberg, and an excellent variety of cocoons has been furnished by those engaged in the undertaking there. At Winthrop College, too, a number of trees have been planted for the purpose of experimentation.

Silk culture is being prosecuted also in Beaufort County, and the following report of the work there is of interest:

"The silk farm at Beaufort, S. C., was started as an experiment by Admiral Beardslee and he had 4,000 white mulberry trees imported from Italy through Miss Kelly. Admiral Beardslee died before he had accomplished very much in the way of silk farming, but the work was carried on by his wife under the management of Tosaku Mizutani, a Japanese, who is educated in the art and knows all about silk growing. The work on this farm has, up to the present, been done by Japanese labor. The cocoons raised are pronounced first-class by the Department at Washington, and bring $1.00 a pound without any trouble. The amount of time put on the growing of the silk is about eight weeks out of the year, six weeks of which is filled up with the feeding of the silk worm. This part of the work has to be done most carefully and requires the closest attention the entire time. The work is pleasant, however, and is easily done by girls, the hardest part of the work being the gathering of the leaves for the silk worm."

All things considered, the prospect for the development of the silk growing and manufacturing industry in South Carolina may be considered excellent.

NOTE.—Some additional data as to sericulture is found in the closing pages of this volume. See Index.

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7
TEA CULTURE

The fact that the Pinehurst Tea Gardens at Summerville are the only commercial producing tea gardens in all of America has attracted widespread attention. It is only within the last few years that the growing of high-grade teas for market purposes at home and abroad has been demonstrated beyond question, and to Dr. Chas. U. Shepard is due the credit of establishing the industry. Without his persistency failure would have undoubtedly resulted. As it is, his experiments have led to the launching of another tea-growing enterprise in this State and one in Texas.

It was over a century ago that the first tea plant was introduced into this country, being planted at Middleton Barony, on the Ashley River, about fifteen miles from Charleston. The bringing of the first plants is credited to the French botanist, Michaux. It was in 1848 that Junius Smith, a retired London business



PICKING TEA.

man, who was seeking the quiet of the country, came to his estate near Greenville and began what Dr. Shepard terms his "path-breaking" experiments in tea culture. "The plants and the seeds with which Dr. Smith experimented were imported, and an article," says Mr. Geo. F. Mitchell, of the United States Bureau of Plant Industry, "appearing in *The American Agriculturist* in 1851, Dr. Smith tells of the excellent condition of his plants, adding that they had withstood a snow of eight or nine inches on January 3d of that year. Dr. Smith died in 1852, having previously made this announcement, 'I cannot help thinking that we have now demonstrated the adaptation of the tea plant to the soil and climate of this country, and succeeded in the permanent establishment within our own borders.'" Dr. Smith's plants being bereft of their guardian, died from lack of attention. About the year 1858 the Federal Government sent Robert

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Fortune to Asia to select and obtain seeds suitable for planting in this country. He went to China, and in less than twelve months the Patent Office had distributed seed generally in the Southern and Gulf States. In many cases the tea plants did well, and home-made tea was being used in homes. There was no general development of the industry, however, notwithstanding the general adaptability of the plant to the climate had been demonstrated, because the important point of teaching the growers how to pluck and make the leaves into tea had been neglected. This obstacle has recently been overcome by the publication by the United States Department of Agriculture of Bulletin No. 301 on "Home Grown Tea," by Geo. F. Mitchell.

It was not until 1880 that Commissioner of Agriculture W. G. Le Duc employed John Jackson, who had fourteen years' experience as a tea planter in India, to conduct a series of experiments, designed to demonstrate the practicability of growing and manufacturing tea in the United States. The first experiments were conducted in Liberty County, Georgia, on a place where tea had been planted in 1850. This seemingly did not prove successful, however, and in the early eighties some 200 acres of land, near Summerville, belonging to Henry A Middleton, were leased for the purpose of prosecuting practical experiments, the Government placing a station there. The seed were imported from China, India and Japan, and was also collected from the few plants then surviving in



IN THE TEA GARDENS AT "PINEHURST."

the United States that had been previously sent out by the Patent Office. At this station a small area was planted in tea, but before the plants had had a fair opportunity to gain headway Commissioner Le Duc was succeeded by Commissioner Loring, and the latter, because of the illness of Mr. Jackson and for other reasons, caused the station to be abandoned.

Shortly afterwards, the father of successful tea culture in the United States, Dr. Chas. U. Shepard, appeared upon the scene. In the spring of 1887 Dr. Shepard bought his "Pinehurst" estate near Summerville, S. C., and also obtained the right to experiment with the plants then surviving on the old Government Tea Farm. The nursery on this abandoned Government farm was full of plants, but no record of any description had been kept. Small quantities of tea were made in a very crude way from leaves picked from these plants and were pronounced by experts in New York and Baltimore as comparing favorably, if not

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better than the best Chinese teas. The first big freeze, as Dr. Shepard expressed it, "I found had almost ruined me," as it killed all the plants to the ground, by splitting the bark on the main stem, but this proved to be a "blessing in disguise," because after the plants were "collar pruned" to the ground, they put forth numerous shoots from the roots that gave a much larger "bearing surface," and thus increased the yield of leaf. Dr. Shepard says that he went on with the work little by little, studying the plant carefully and working improvements all the time.

In 1896 Secretary of Agriculture Wilson interested himself in Dr. Shepard's experiments and paid a visit to Pinehurst. It was on this trip that Secretary Wilson made the remark quoted in the opening chapter of this volume. Secretary Wilson at once proceeded to help Dr. Shepard to get a supply of the Dragon's Pool seed, a variety of tea too costly for exportation from China. The Secretary of Agriculture sent Mr. Saunders to Pinehurst to carefully inspect the property and report whether the Government could consistently lend Dr. Shepard any aid. Mr. Sanders had previously made an adverse report on the tea experiments that had been abandoned by the Government, and, strange to say, they had been carried on on the adjoining farm. However, after seeing what Dr. Shepard was doing, he expressed himself as delighted, and made such a report that Secretary Wilson determined to coöperate with Dr. Shepard. Pine-



TEA GATHERERS AT WORK.

hurst has been operated in this way for the last few years, at least one scientific assistant being detailed to the station. All rainfall and temperature records are kept regularly at the station, and Dr. Shepard has, after long experimentation, evolved valuable machinery for making the tea ready for the market. There are now 100 acres in tea at Pinehurst on lands that have been thoroughly underdrained. Dr. Shepard planted pecan-nut trees 40 feet apart in about 18 acres of his tea fields. with the idea of realizing a greater profit with the same amount of cultivation, but it reduced the yield of his tea to such an extent that the scheme had to be abandoned. The tea gardens at "Pinehurst" are planted in seedlings grown from seed imported from the best gardens in Japan, India, China and Ceylon; there are also a few plants grown from seed imported from the Island of Formosa; this variety is used to make the Formosa Oolong teas

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that are so popular with the American people. In Formosa the plants are propagated from cuttings and layers, and the Federal Government is busy at present trying to secure layers to be planted in this country.

The production has now reached some 12,000 pounds of commercial tea annually, which is about one-half the capacity of the curing factory now in operation.

Dr. Shepard says that he has been experimenting throughout for knowledge, and has not been so much after the making of money returns. He says that thousands of dollars have been expended in the effort to establish the Ceylonese type. The Japanese types have also proven costly. Dr. Shepard says that the thoroughly up-to-date tea garden gives equally as much trouble as a sugar beet plantation, it being necessary to have expert pickers, tea tasters, chemists, etc. He asserts that it is not advisable for anyone to go into tea culture for commercial purposes with less than $50,000 capital and several hundred acres of land well cleared and flat, fertile and so drained that there shall be no stagnant water. He says that if rice land is once made "sweet" there will be no necessity for the use of fertilizers. He says that the tea planter must be a man of good education and discrimination. It is necessary to reject many leaves that are picked. The Pinehurst tea retails from 80 cents to $1.00 per pound, and is sold direct to the retailers. There is a ready market for the entire output of the gardens, this market extending from Maine to Florida in the South, and to California in the West, where the purchasers paid 8½ cents per pound freight on green tea in preference to paying 2½ cents on imported Japanese. Shipments are now made regularly to Bremen and to Liverpool, and some shipments have been made to France. The Pinehurst teas are sold through regularly established agencies in Georgia, Virginia, Washington, Baltimore, Philadelphia, New York, Chicago, Grand Rapids, and many other leading points in the country, and a number of the leading hotels in New York City keep it—particularly "American Breakfast Tea"—on their menu cards.

One of the greatest difficulties that the development of the market has encountered has been in transportation, it being cheaper to ship tea from China to Chicago than from Summerville to Chicago.

Dr. Shepard has invented several machines for the manipulation and manufacture of tea, the two most important being a green tea "Sterilizer" and a machine for polishing the green teas without the use of chemicals, as are used in the East. This machine turns the dark, uncolored green tea to a beautiful greenish-gray, simply by the principle of attrition. This greenish-gray color is produced in the East by the addition of Prussian blue, turmine and soapstone. The "Pinehurst" teas are also compressed into small tablets by a machine that furnishes about 2,000 pounds of pressure. These tablets are made from dust ground from pure tea and are made without the addition of any glutinous substances, as are tea bricks in the Orient. They do not absorb atmospheric moisture or lose their strength or deteriorate by keeping. They are packed in boxes, twenty tablets to the box, and each tablet capable of making one cup of tea. Three boxes are sold for 25 cents, and the tablets are made in three varieties: the Oolong, "American Breakfast" and green.

It is confidently expected that the next year's production will reach 20,000 pounds. As a result of what Dr. Shepard has been successful in accomplishing, the American Tea Company has begun the establishment of a large tea garden in Colleton County, and elsewhere in the State tea plants are being grown for the purpose of home consumption. There are a few valuable plants of considerable age to be found at Columbia and at Gaffney. The cultivation of the tea plant could safely be risked where the temperature seldom falls below 24° F., and never goes below zero, and where the annual rainfall exceeds fifty inches, thirty inches or more of this precipitation occurring during the cropping season. The plants being of subtropical origin, need as much protection from the cold as possible; therefore, much better results can be obtained where the southern exposure, with an abundance of sunshine, is obtained. A well drained, friable and easily penetrable clay loam or sandy loam containing a large amount of organic matter is best adapted to the cultivation of the tea plant. In the fall this beautiful evergreen plant is covered with handsome, fragrant white flowers having a yellow center, making it a decidedly ornamental plant.

The crop of an average tea plant is about three ounces of the cured tea during the picking season, so that 100 plants will yield about eighteen pounds a year. As a pound makes from 350 to 400 cups of tea, fifty plants should furnish a cup of tea apiece to a family of nine every day in the year.

Nearly one acre of tea is grown under "shelter." This tea is very rich in theine, the stimulating principle, and very low in tounin, the deleterious constituent, and is the kind used by the Mikado of Japan and his Imperial Court. It is very high in sugar and is known in Japan as "sugar tea."

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8

TOBACCO



It is almost needless to attempt to give a sketch of the history of tobacco in South Carolina, for tobacco was here with the Indians when the country was discovered, and it has always been an item to be reckoned with in South Carolina agriculture. It was never during the early days, however, as in Maryland and Virginia, a legal tender. Tobacco culture in South Carolina has always been confined to the 62°-64° isothermic zone, in any portion of which the plant grows well, but it is at its best in this zone in the counties in which the annual rainfall is about 50 inches. In other words, what is commonly known as the Pee Dee section of the State is the home of tobacco. The figures herewith only deal with the crop of today and of recent years, because as a crop of real value it is recent. The industry has had a varied experience, the causes of which need not be discussed. It suffices to say that the crop of 1907 is the record crop, and that it is selling at a record price. The figures given tell their own story, the acreage being increased whenever the market warrants it.

	Acreage.	Production. lbs.	Value.	Av. Val. per lb.
1907	27,000	26,000,000	$2,795,000	10.75 cts.
1906	13,400	8,978,000	942,690	10.5 cts.
1905	12,574	9,254,464	805,138	8.7 cts.
1904	11,643	8,185,029	671,172	8.2 cts.
1903	40,149	24,490,890	1,249,035	5.1 cts.
1902	34,912	25,625,408	1,793,779	7. cts.
1901	27,259	20,946,705	1,551,519	7. cts.
1900	26,567	23,203,003	1,590,648	7. cts.

In Florence, Darlington, Mullins, Marion and Timmonsville there are tobacco warehouses and manufacturing plants, and the industry means much to the Pee Dee country.

In ante-bellum days, and farther back, tobacco was rather extensively cultivated in South Carolina. In Mills's Statistics and in Ramsay's History important details are given concerning this industry. During the past 25 years new impetus has been given to the crop, which is now one of the most important factors in the industrial development of South Carolina.

The present principal tobacco growing counties are Florence, Darlington, Marion, Williamsburg, Sumter, Horry and Clarendon. Florence, Timmonsville, Mullins and Darlington are the leading home tobacco markets in South Carolina.

Each of these markets sells annually leaf tobacco by the million pounds, and with three or four leaf warehouses each, they constitute the acknowledged center of the South Carolina home leaf tobacco markets. Since the establishment of these home markets the greatest changes have been wrought in the towns referred to, changes of the utmost importance and which involve the upbuilding of towns and communities.

The four towns referred to—Timmonsville, Florence, Mullins and Darlington—are the leading home markets which have done most in establishing the record South Carolina has made in tobacco culture. In these centers were the first efforts made; here was where the great preliminary difficulties were successively met and mastered. The business men and planters spent time, money, work and persistent efforts in the endeavor to permanently establish this industry.

The South Carolina tobacco crop is now of such permanent and recognized value that official action in furtherance of its development has been taken by the United States Department of Agriculture. In the appropriation of 1902, Congress made provision for extensive experiments in tobacco culture and curing in South Carolina. Two experts were sent to examine the soil, and a farm was selected at Hartsville in Darlington County as the site for official experiments to be made by the Department of Agriculture. An abstract from the report made to Secre-

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TOBACCO FIELD.

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tary Wilson will have authoritative consideration here: "It is the firm conviction of Prof. Whitney that it is possible to produce in South Carolina as fine a grade of Cuban fillers as is that imported from the island." This is all that could be desired, and emphasizes the situation which has been established under a variety of climatic conditions, upon all varieties of soil, and this during a period of 25 years.

The tenth United States census, published in 1880, contains no mention whatever of South Carolina as a tobacco-growing State. This was not a quarter of a century ago, and the tobacco crop of this State in 1904 aggregated about 26,000,000 pounds, as is shown by official United States census returns.

In the eleventh United States census, of 1890, South Carolina ranked 19th in the procession of tobacco-growing States, while the twelfth census, published ten years later, revealed the remarkable fact that South Carolina, in the number of pounds of leaf tobacco produced, ranked 9th out of 42 tobacco-growing States. A study of the same report shows also that this new crop, requiring most careful cultivating and handling, had been so successfully grown that in acreage South Carolina ranked 7th.

The census figures really place South Carolina approximately in the 6th place as a tobacco-producing State, for the reason that the figures for the next three highest differed not materially from those given for South Carolina. In addition to this, the great consideration involved in the statement that in proportion to acreage, yield and average price, no State showed finer results than did South Carolina, which State reached a more rapid ratio of increase in yield and culture than any other.

The twelfth census shows that 6,744 tobacco farms, containing a total of 25,993 acres, were in South Carolina. From these 26,000 acres were gathered 19,895,970 pounds, an average yield—from all sorts of land and from equally variegated beginners in tobacco culture—of nearly 800 pounds per acre. This crop—as revealed by these same official returns—netted $1,297,293, which figures, taking the average yield as a basis, is much more per acre than is the market price for South Carolina farming lands, even in favored sections.

The 1907 Crop the Record Crop.—Mr. Hartwell M. Ayer, a member of the General Assembly from the county of Florence, who has himself prepared a handbook of South Carolina, at the request of the Department of Agriculture, Commerce and Immigration, has thoroughly investigated the 1907 crop of tobacco in the tobacco belt of the State, and has filed the following report:

"Tobacco in this section is selling higher this year than it has sold since the banner year, 1902. The prices that year were particularly high, partly because of the hot fight between the American Tobacco Company and the Imperial, and partly because the tobacco was really of a much better grade. The price of South Carolina weed has gone up steadily year by year with some few variations in particular grades. Just now the prices of most grades are really much higher than they were in 1902, and the average for the year will probably be a little higher.

"It is estimated that there are 27,000 acres in tobacco in the Pee Dee tobacco belt. These figures are conservative and come from the official report from which the Government statistics are made up. From this acreage the yield will be about 26,000,000 pounds, which will sell for an average of 10¾ cents. This will mean a net income for this section of the State of $555,000, over half a million dollars put in three or four counties for one crop which is hardly considered with corn and cotton in the farmers' count. It means a little more work and a little more money for fertilizer, but very little more land cultivated and very few more hands employed, if any. It comes in at a time that enables the farmer to gather his cotton without having recourse to the merchant or to the bank. The tobacco counties are Florence, Darlington, Williamsburg and Marion, with a little in Horry and Clarendon.

"South Carolina tobacco has won its place in markets of the world. It has been growing in favor rapidly for some years, and is now being especially advertised by foreign houses for their trade as the most pleasing of all tobaccos. It is understood that fully 75 per cent. of this tobacco is used at home. In time past it could not be sold at home. but as the farmers have learned how to make it better, and the prejudice of the dealers has been removed, it has been in great demand all over this country. It is used for wrappers and cigarettes and cut plug, which is year by year becoming more and more in demand. It has both beauty of color and body, which makes it the most desirable weed on the market.

"The figures in the hands of the Government agents will show that all of the markets in the State which handle the same grade of tobacco sell at practically the same price. The difference in prices is generally in the quality or the grade

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of the tobacco. The price may be regarded as permanent now with such few fluctuations as are referred to above, and at those prices there is no question of its being a paying crop. There is practically no danger of the market being overstocked with South Carolina tobacco; it has a place all its own and that is at the top of the list. It will sell high when other tobaccos do not."

Manufacture of Tobacco.—The manufacture of tobacco has grown rapidly in South Carolina. The average price per pound of tobacco has increased rapidly since 1900, when it was only 6.6 cents. In 1900 there were six establishments making cigars and cigarettes, with a capital of $12,510; in 1905 there were seven, with a capital of $699.296, employing nearly 500 persons and using $108,289 worth of materials, where five years before only $9,647 were being used. The value of their product in 1905 was $257,078. against $31,550 in 1900. In this production, 347,690 pounds of tobacco were used and 15,372,380 cigars and cigarettes (practically all cigars) were manufactured. Into chewing tobacco and snuff, South Carolina manufactures 1,269 pounds of tobacco, mostly plug.

In 1907 there was one plant manufacturing cigars, employing 450 persons and turning out in gross value of products $378,000 annually.

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9

GOOD ROADS

Nothing aids more in the development of the agricultural industry of a commonwealth than good roads. South Carolina has ever been a pioneer in the matter of good roads, as will be seen under the head of transportation in this volume. But subsequent to the Civil War little in this direction was done until the year 1895, when the introduction of the rural mail delivery system made speedier transportation in the outlying country districts desirable. The real agitation, however, began about the summer of 1888, when the sand-clay treatment—since so generally adopted and so successfully used as to become the object-lesson system for other portions of the United States—was suggested by Charles C. Wilson. The State abolished its old county government system and in 1895 adopted the new system permitting the use of short term convicts in the construction of roads, the convicts working in conjunction with free labor. Such a provision naturally was viewed with apprehension, and in Richland County in the latter part of 1895, pushed vigorously by F. H. Hyatt and others, the new system was put in practice. By private subscriptions, supplementing county work, an experiment road was built out of Columbia on the "Winnsboro Road" about three miles. This experiment really started the work off in South Carolina, and by January, 1899, the sand-clay road scheme was being put into practical and successful operation in several counties. In 1901, in the Year Book of the United States Department of Agriculture, this sand-clay road scheme



BEFORE WORKING.

was advertised to the United States as a model scheme for the ideal country road, capable of being constructed at a minimum of cost. The first builded of these roads lasted for about five years, practically without repairs. A State Good Roads Association was organized in 1898, the influence of which has been most effective.

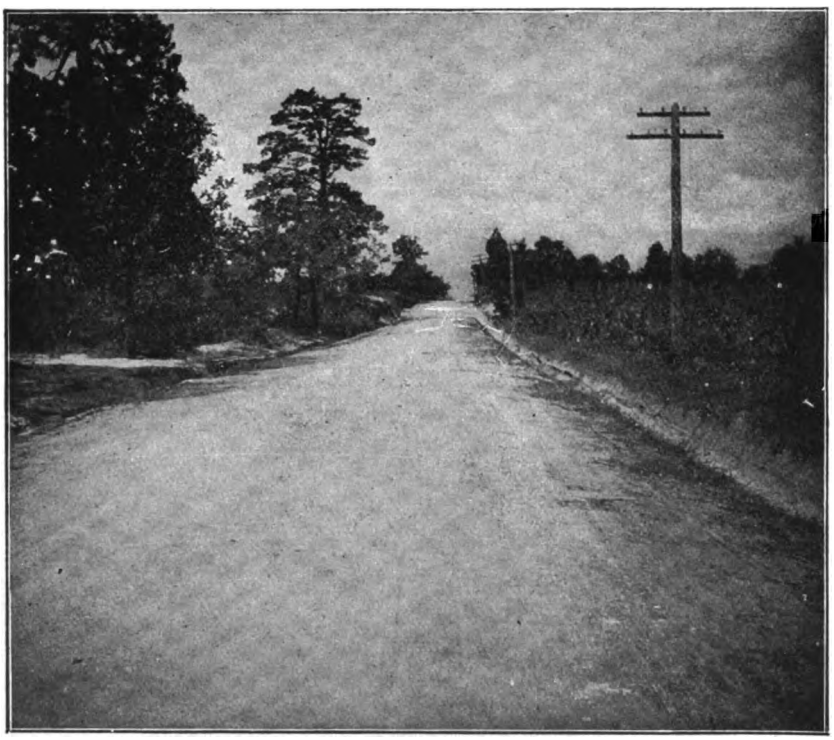
Very recently there has been a general agitation in favor of a statute requiring the use of broad tires, and broad-tired wagons have been voluntarily brought into use by many farmers in many sections, but the legal requirement has not yet been made. The sand-clay roads are now built regularly at a cost varying from $150 to $300 per mile; the annual cost of repairs is about $10 per mile. Many of these roads, particularly those leading out of the chief centers of population, are exceptionally fitted for automobiling, and the horseless carriage is often passed in a fifteen or twenty mile journey at this time; its use is daily becoming more general.

In November of last year (1906) the United States Office of Public Roads gave this interesting summary as to mileage of and expenditures for public roads in this State, the figures being for the year 1904:

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Mileage of Roads.—The accompanying table shows that in 1904 there were 41,830 miles of public road in the State of South Carolina. Of this mileage, 69 miles were surfaced with stone, 179 miles with gravel, 1,575 miles with sand-clay mixtures, and 55 miles with shells, making in all 1,878 miles of improved road. It will be seen from these figures that 4.5 per cent. of the roads have been improved. By comparing the total road mileage with the area of the State, it appears that there were 1.3 miles of public road per square mile of area. A comparison of mileage with population shows that there was one mile of road to every 32 inhabitants and one mile of improved road to every 713 inhabitants.

Sources of Revenue.—The county or township boards of commissioners of the various counties or townships may cause a road tax to be levied of not to exceed one mill on all taxable property in any county or township, except in the county of Bamberg, where the levy must not exceed two mills. In counties where the contract system of working the roads is adopted, the county or township boards may authorize a special annual levy of not to exceed one mill on all taxable property. In view of the fact that seven counties report two-mill levies, it is



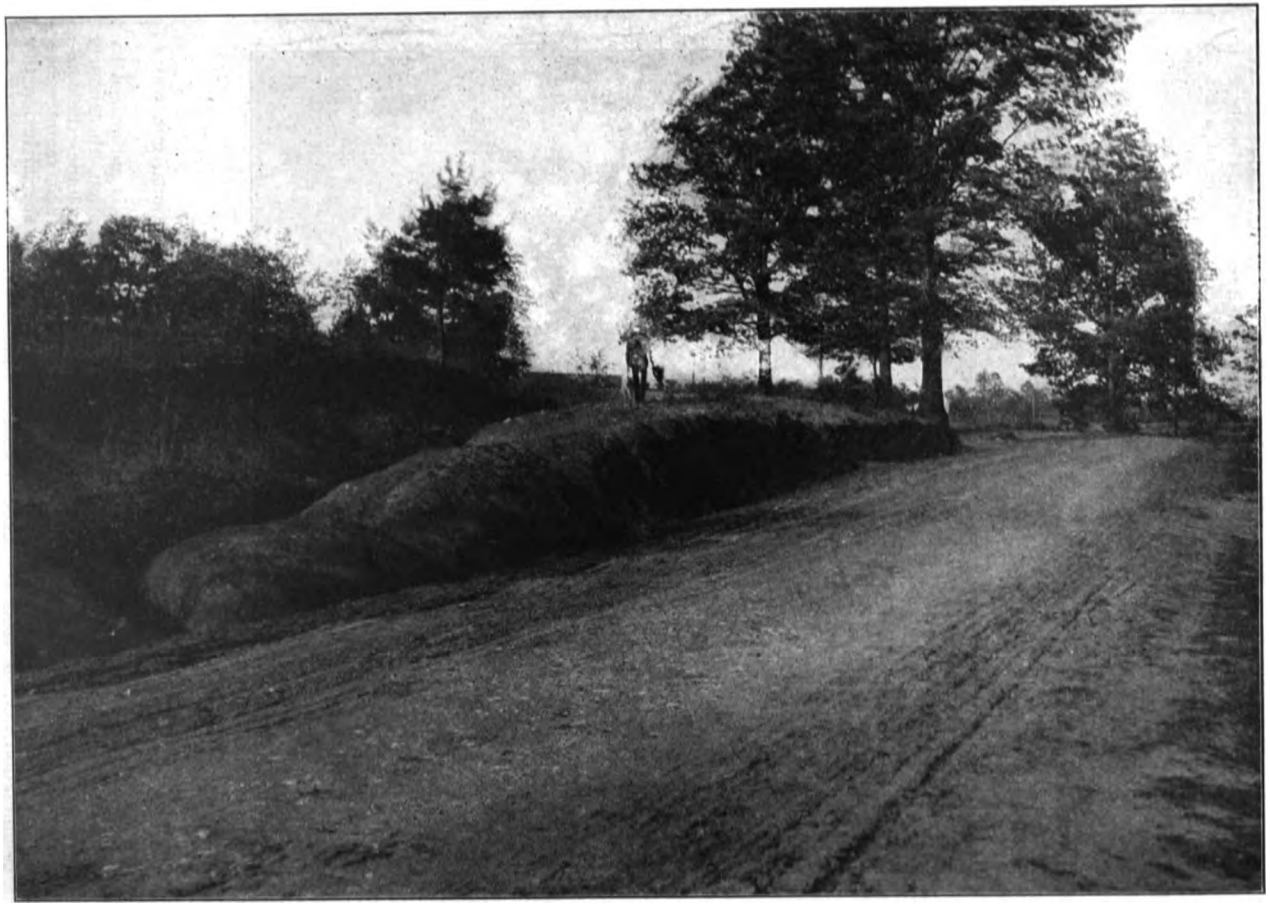
A COMPLETED SAND-CLAY ROAD.

assumed that one mill was the regular levy and that the additional mill was a special tax.

In the county of Colleton the county board of commissioners is authorized to hire the county chaingang to any reliable person or corporation, the money realized therefrom to be a part of the road fund. In all other counties the commissioners are authorized to work the convicts on the roads, their maintenance being paid for out of the funds derived from the regular or special levies, the commutation tax, or from the general county funds.

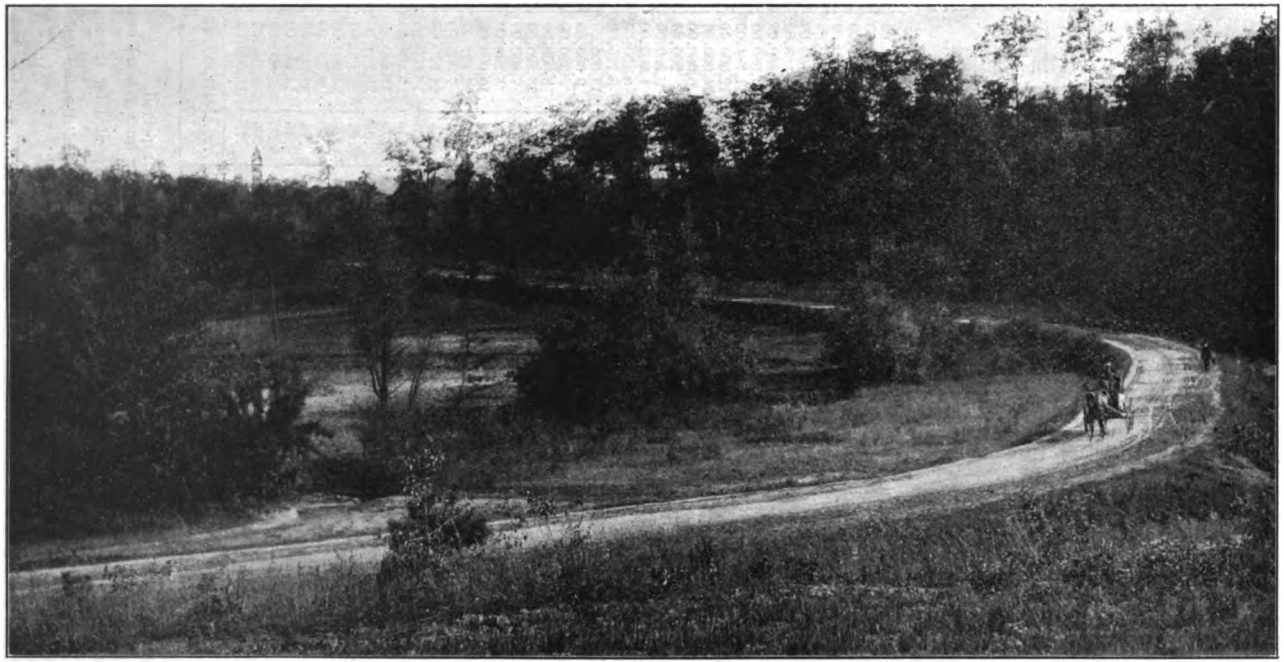
All able-bodied male persons between certain ages—which vary in the different counties—unless by law exempt, are required to perform or cause to be performed annually not less than two nor more than ten days' labor upon the public roads. The number of days each person is required to perform road duty is fixed by law and varies in the different counties. In lieu of such labor a commutation tax of not less than $1 nor more than $3 may be paid by the person

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A REALLY GOOD ROAD.

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A PIEDMONT ROADWAY.

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so liable. The rate of commutation is also fixed by statute in the various counties.

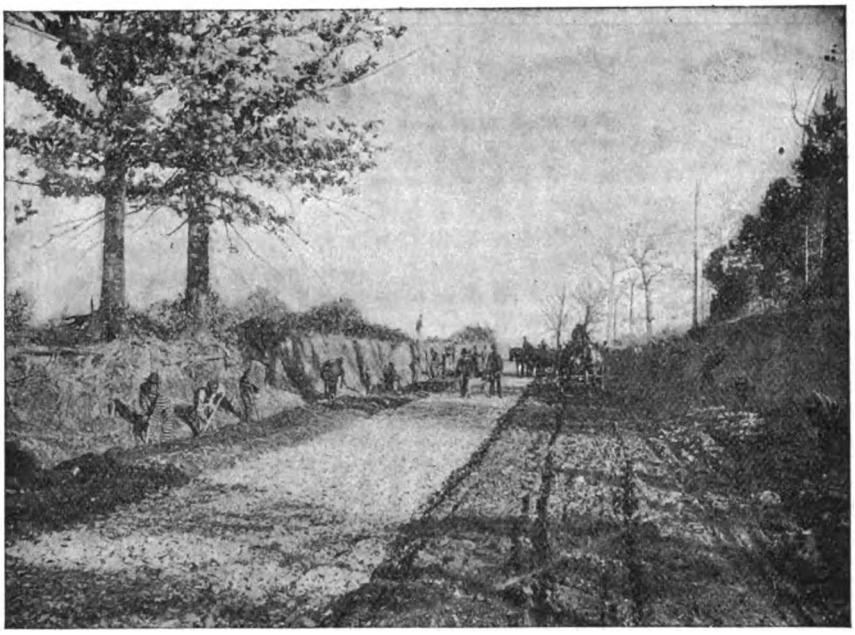
Since 1904 the Legislature has authorized the county commissioners to fix the number of days the taxpayers are required to work on the roads and the rate at which this labor may be commuted in cash.

MILEAGE AND EXPENDITURES IN 1904.

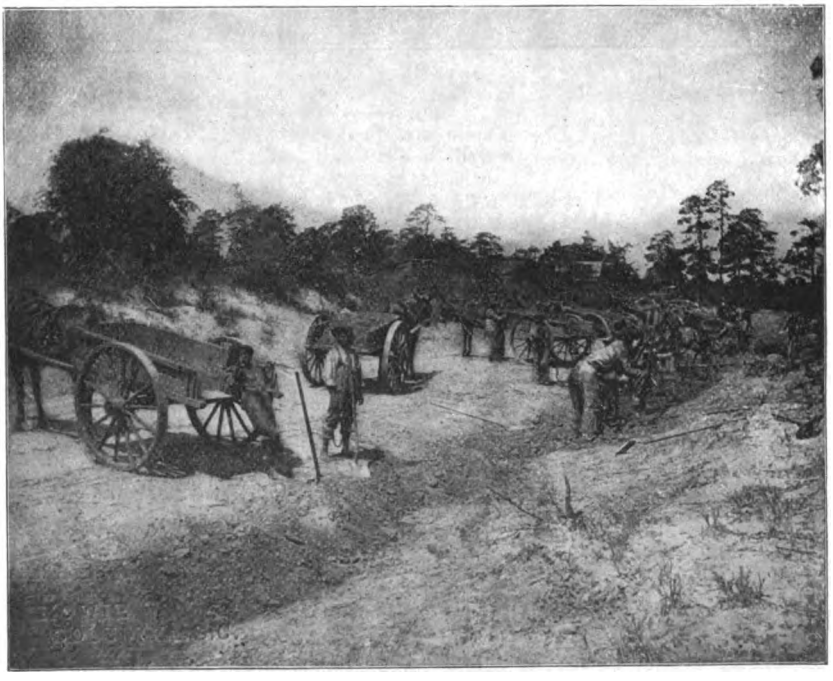
County.	Miles of Public Roads.				Expenditures in Money and Labor.						Total amount expended in money and labor.
					Cash Tax.		Labor Tax.				
	Total of all Public Roads.	Surfaced With Stone.[1]	Surfaced With Gravel.[1]	Surfaced With Sand-clay Mixtures.[1]	Road Levy—Rate per $100.[2]	Amount Cash Expenditures.[3]	Number of Men who performed road duty.[4]	Days' labor required.	Average wages per day for road work.	Estimated value of labor tax.	
Abbeville. . . .	1,000	5	7	.....	5	$7,500.00	4,000	4	$.60	$9,600.00	$17,100.00
Aiken.	2,000	....	....	30	12	7,500.00	3,419	4	.60	8,205.60	15,705.60
Anderson. . . .	2,200	....	5	.....	10	16,000.00	1,000	4	.75	3,000.00	19,000.00
Bamberg. . . .	400	....	....	150	20	5,000.00	800	6	.75	3,600.00	8,600.00
Barnwell. . . .	900	....	....	40	12	7,160.00	3,720	4	.50	7,440.00	14,600.00
Beaufort. . . .	[5]400	....	....	.....	....	4,500.00	1,800	8	1.00	14,400.00	18,900.00
Berkeley. . . .	1,500	....	....	.....	10	4,000.00	3,000	8	.60	14,400.00	18,400.00
Charleston . . .	[6]700	1	....	.....	....	12,236.80	2,100	4	.70	5,880.00	18,116.80
Cherokee. . . .	700	5	8	.....	20	9,900.00	1,100	4	.70	3,080.00	12,980.00
Chester.	600	10	10	.....	20	18,144.00	3,928	6	.50	11,784.00	29,928.00
Chesterfield . . .	700	....	....	.....	12½	3,125.00	4,000	4	.75	12,000.00	15,125.00
Clarendon. . . .	800	....	....	.....	....	5,000.00	4,000	8	.75	24,000.00	29,000.00
Colleton. . . .	900	....	....	.....	8	2,900.00	1,600	6	1.00	9,600.00	12,500.00
Darlington. . .	750	....	....	100	10	11,600.00	100	4	.50	200.00	11,800.00
Dorchester . . .	600	....	....	.....	20	4,600.00	2,200	6	.75	9,900.00	14,500.00
Edgefield. . . .	1,700	....	....	.....	2½	5,600.00	600	6	.50	1,800.00	7,400.00
Fairfield. . . .	850	....	....	.....	....	3,500.00	[7]3,050	4	.50	6,100.00	9,600.00
Florence. . . .	[8]675	2	....	160	10	10,000.00	[8]2,700	5	.65	8,775.00	18,775.00
Georgetown . .	375	....	....	.....	3	8,000.00	3,000	8	.75	18,000.00	26,000.00
Greenville . . .	1,500	4	[9]	.....	10	10,000.00	5,000	3	.60	9,000.00	19,000.00
Greenwood . . .	850	10	5	.....	10	8,000.00	300	4	.60	720.00	8,720.00
Hampton. . . .	2,000	....	....	.....	5	5,000.00	2,000	8	.50	8,000.00	13,000.00
Horry.	2,000	....	....	.....	20	5,181.00	3,000	6	.75	13,500.00	18,681.00
Kershaw. . . .	800	....	25	.....	20	6,826.53	3,000	4	.65	7,800.00	14,626.53
Lancaster. . . .	600	....	....	10	....	500.00	2,600	4	.50	5,200.00	5,700.00
Laurens.	1,000	....	[9]	.....	20	10,500.00	5,000	4	.50	10,000.00	20,500.00
Lee.	480	....	....	.....	....	6,000.00	600	6	.75	2,700.00	8,700.00
Lexington . . .	1,200	....	....	.....	....	1,135.00	2,365	4	.75	7,095.00	8,230.00
Marion.	1,200	....	....	.....	15	10,545.48	4,000	8	.75	24,000.00	34,545.48
Marlboro. . . .	500	....	....	100	....	7,500.00	3,000	8	.75	18,000.00	25,500.00
Newberry. . . .	1,000	....	....	.....	....	3,500.00	800	6	.50	2,400.00	5,900.00
Oconee.	800	....	....	.....	20	6,000.00	3,200	6	.70	13,440.00	19,440.00
Orangeburg . .	1,100	....	....	[5]200	10	10,000.00	7,000	6	.60	25,200.00	35,200.00
Pickens. . . .	1,000	....	100	.....	10	4,000.00	1,800	5	.60	5,400.00	9,400.00
Richland. . . .	700	2	....	350	10	20,000.00	3,200	10	.75	24,000.00	44,000.00
Saluda.	1,100	....	....	.....	10	7,000.00	3,100	6	.50	9,300.00	16,300.00
Spartanburg . .	1,500	10	....	.....	10	48,191.65	6,000	3	.75	13,500.00	61,691.65
Sumter	1,500	....	....	250	6	1,831.22	3,200	6	.75	14,400.00	16,231.22
Union	550	....	....	100	10	4,500.00	3,000	2	.60	3,600.00	8,100.00
Williamsburg. .	1,800	....	....	85	10	3,205.72	3,500	4	.65	9,100.00	12,305.72
York	900	20	15	.....	8	8,400.00	4,500	4	.75	13,500.00	21,900.00
Total. . . .	41,830	69	179	1,575	....	$334,081.90	116,282	....	.....	$411,619.60	$745,701.50

[1]Where figures are not given in these columns no mileage has been reported.
[2]If levy is not stated, amounts expended in cash were drawn either from general county fund or from labor tax paid in cash.
[3]Includes amounts received from commutation tax and amounts expended for the support of the county chaingangs, so far as these amounts have been reported.
[4]When labor tax was paid in cash, the amount so paid has been included under cash expenditure and the number of men paying the same eliminated from this column.
[5]Includes 25 miles of road surfaced with shells.
[6]Includes 30 miles of road surfaced with shells.
[7]Estimated in this office. Impossible to get a complete report from this county.
[8]About 8,400 days' work done in this county in 1904 by convicts at a cost for maintenance of $0.35 per day.
[9]Report from this county indicates that there are 500 miles of gravel roads, but these are probably natural rather than improved roads.

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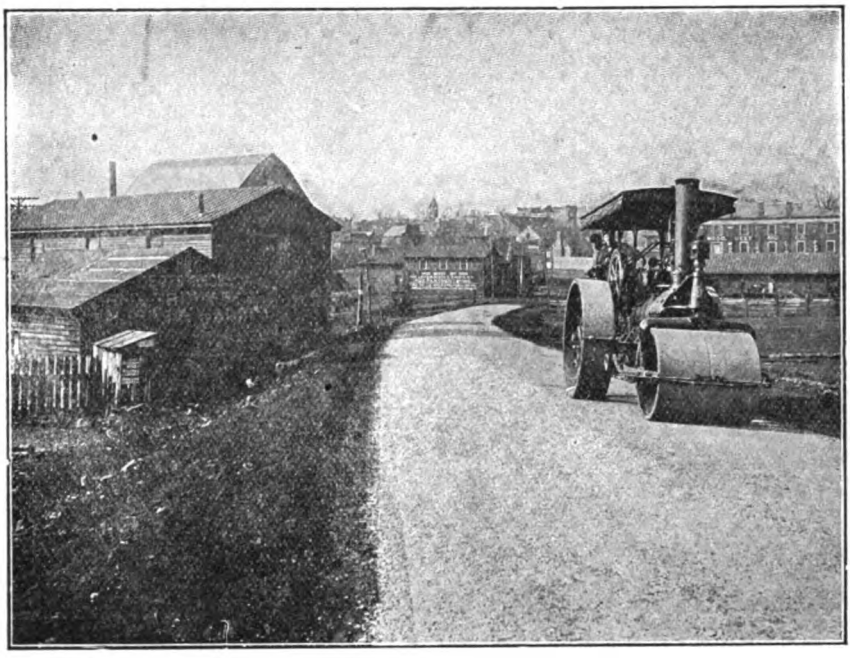


A ROADWAY.

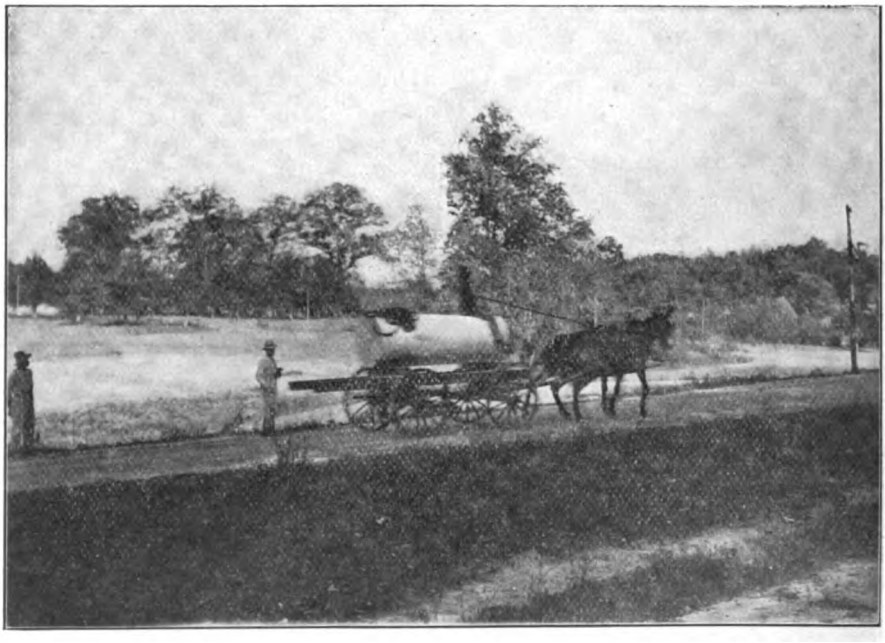


GANG AT WORK.

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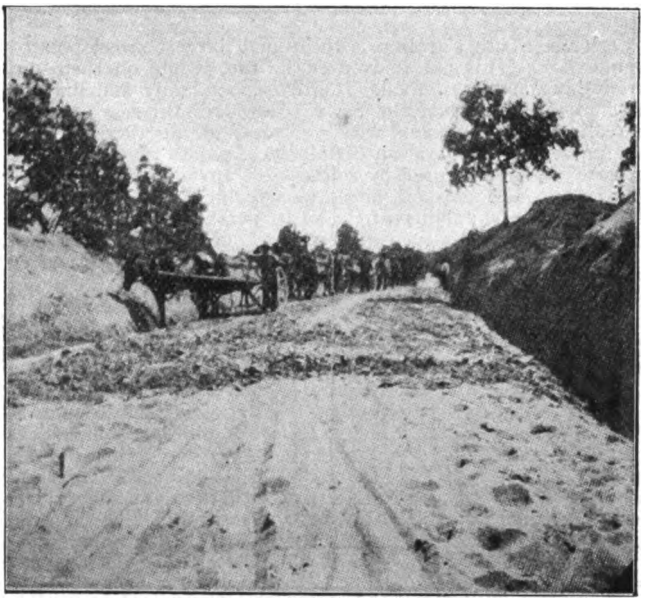
STEAM ROLLER USED.



USING THE WATER CART.

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Expenditures in Money and Labor.—The amount derived from the property tax and the commutation tax and expended on roads was $334,081.90 in 1904, and the estimated cash value of the labor tax was $411,619.60, making a total expenditure of $745,701.50. It will be seen from the table that the cash value of the labor tax in each county is the product derived by multiplying the number of men drafted for road service by the number of days required of each per annum, and this product by the average wages per day for road work. When



BUILDING THE WAY.

the labor tax was commuted for cash, the amount so commuted has been included under cash expenditure and the number of men commuting eliminated from the labor-tax column.

By comparing the total expenditure with the total mileage of public road and with the population of the State, it is found that the funds collected and expended for road purposes, including the estimated cash value of the labor tax, amounted to $17.82 per mile of public road, or $0.55 per inhabitant.

There has been in 1908 a considerable revival of good road building, Richland County, for instance, undertaking the building of considerable heavy granite macadam roadway.

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10

MISCELLANEOUS

Sweet Potatoes.—South Carolina is the fourth largest sweet potato producing State in the Union. This potato is used by the people on their dining tables and is a nourishing article of food. It grows abundantly and luxuriantly in all the soils and in all sections of the State. Its possibilities are only now beginning to be realized. Experiments with a process for canning and with the conversion by a process of evaporation of the sweet potato into non-perishable food tablets, the latter now being used by soldiers on forced marches, have in the last few years proven most successful, and a new realm of usefulness for this article has been opened. The suitability of the sweet potato for starch manufacture has also been demonstrated, and even at this time one of the largest starch manufacturing concerns in this country is carefully considering the matter of establishing large plants where the sweet potato is most prolific.

County.	Acreage.	Production.
Beaufort	5,184	192,474
Charleston	3,679	203,817
Horry	3,164	252,175
Colleton	2,381	146,734
Sumter	2,318	171,594
Marion	1,871	190,307
Marlboro	1,069	106,604
Orangeburg	1,081	149,249

Sweet potatoes are grown on some 80,000 farms in the State, and about 50,000 acres are devoted to this crop. The annual yield is about 3½ million bushels, the census giving the value at a little over 1½ million dollars. The census gives the value per acre of the South Carolina sweet potato crop at $31.50 and the value per bushel at 46 cents. The census also gives the yield per acre at 69 bushels. This latter figure, however, means nothing, as this is the average of all of the potato fields in the State, including the thousands of acres of uncultivated patches of the negroes, who apply no fertilizer. A yield of 250 bushels per acre under proper cultivation is about an average one.

Beaufort is the largest potato producing county in the State, as may be seen from the following statement of acreage and production in bushels of the leading potato producing counties of South Carolina in 1899:

Sugarcane.—The growing of sugarcane is rapidly becoming a revived industry in South Carolina, the soils along the Savannah River counties, principally Aiken, Barnwell and Hampton, being particularly well adapted to the purpose. It is impossible to give accurate figures for the year 1907, though there has been a marked increase in the last four or five years. The table herewith shows the production and value of sugar, molasses and syrup at the opening of the year 1900.

	Pounds.	Gallons.	Value.
Sugar	49,590	.....	$ 2,256
Syrup	.....	805,064	310,799

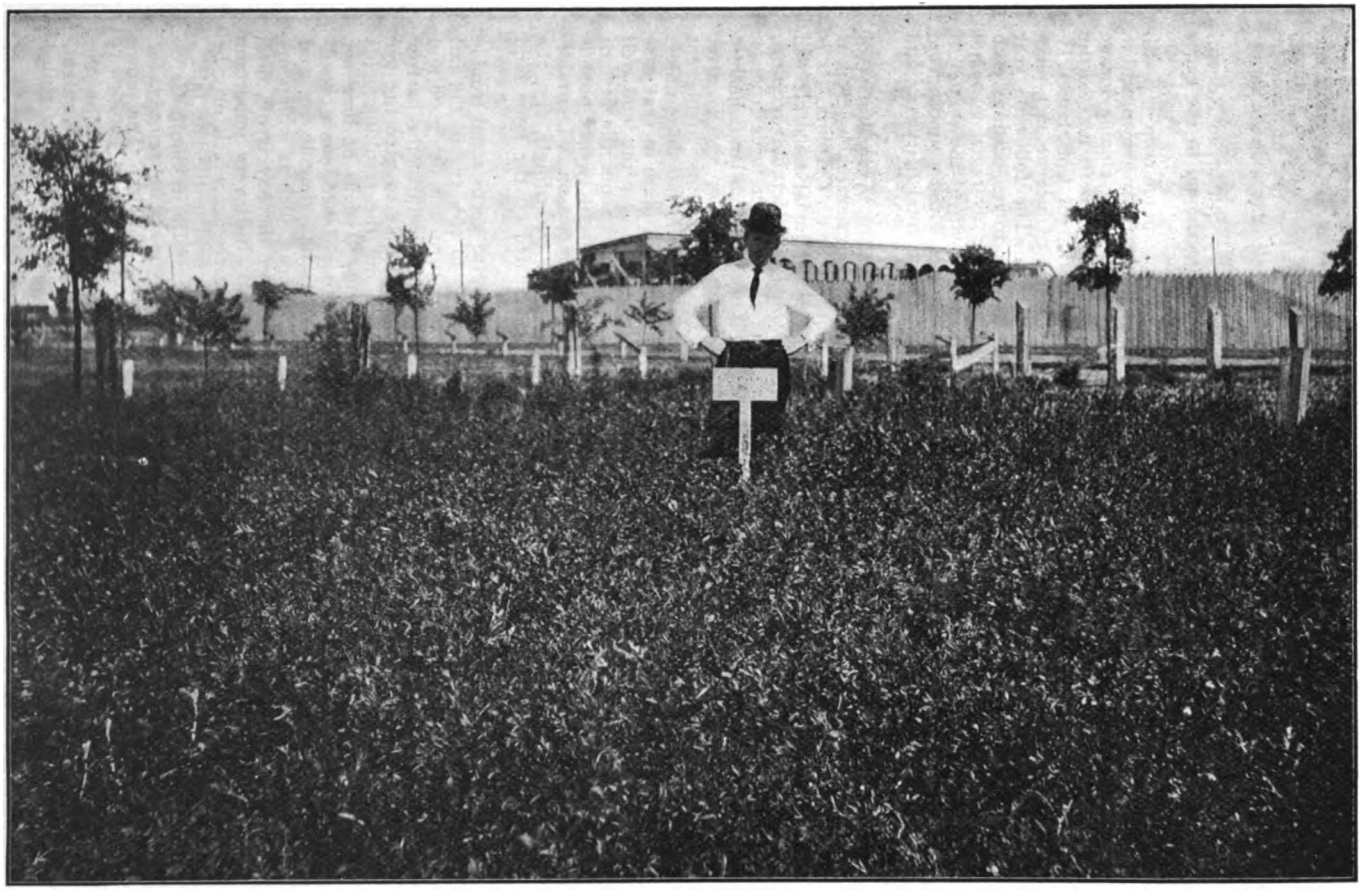
The growing of sugarcane is not a new industry in this State. Sugarcane was first planted in South Carolina in 1822, an experiment patch having been planted in "Tivoli Garden," near Charleston, by Philip Chartrand, in 1827. Ramsey's History of South Carolina makes no reference to sugarcane, either as one of the garden or field crops of the State, in its chapter devoted to an elaborate review of the agricultural growth of the State from its first settlement to 1808.

Other experiments rapidly followed Chartrand's. Mr. Edward Barnwell, in 1830, reports in the *Southern Agriculturist* an experiment on one acre that he had planted, in 1829, at the request of the Agricultural Society of South Carolina, which yielded 23,150 average-sized stalks of cane, that it would be safe to estimate at 27 to 30 tons for the acre.

In concluding his report to the Society, Mr. Barnwell said: "I am inclined to think our best soil will be such as is best adapted to the culture of corn, and state further that the cane is as easily cultivated."

According to the United States Census of 1850, South Carolina produced 805,200 pounds of sugar; 1860, 237,600 pounds; 1870, 1,266,000 pounds of sugar

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ALFALFA ON THE COAST.

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and 436,882 gallons of molasses or syrup; in 1880, 274,800 pounds of sugar and 138,944 gallons of molasses or syrup, and in 1890, from 3,305 acres produced 219,980 pounds of sugar and 386,615 gallons of molasses or syrup.

A few years ago, consequent upon the visit of Dr. Stubbs to Georgia, Capt. John Lawton, a prominent citizen and successful planter of Hampton County, was induced to ascertain his cane yield in tons to the acre, a test of value he had never applied before, and found it to be 21.5 tons. It was a low average yield, as his cane had suffered from drought.

Analyses of samples of South Carolina canes made by Dr. Stubbs, in November and December, 1899, show the sugar content to be about equal to the canes of Georgia and Florida.

Alfalfa.—Alfalfa has not been grown very extensively as a forage crop in South Carolina, although in certain localities it has been most successfully grown, and in Anderson and Fairfield counties today there are stools of this valuable forage plant, still vigorous, known to be fifty years old. Perhaps the most noteworthy experience in the history of the State with alfalfa was that of Col. James H. Ryon, of Fairfield County, who in 1874 planted a half acre of lucerne on a piece of worn-out red land, which was infested with nutgrass. The following year he cut one cutting and from that on until 1880 from four to ten cuttings each year. The ten cuttings were obtained in 1878. The plants averaged two and one-half feet in height in every cutting, making a total growth of the season of twenty-five feet. By actual weight each cutting averaged 4,189 pounds from this half acre, which was also carefully measured, giving a total of twenty and one-half tons to the acre.

Writing of alfalfa in South Carolina, Dr. W. J. Spillman, Agriculturist of the United States Department of Agriculture, says: "This valuable crop is adapted to climatic conditions in all parts of the State of South Carolina. It is adapted to a wide variety of soils, but does best on rich alluvial soils. It will not grow on distinctly wet lands, though it will stand considerable overflow. It is very difficult to start on poor, thin land, and is very subject to destruction from weeds when the alfalfa is young and tender. On good rich land the best method of starting alfalfa is to plow the land broadcast near or shortly after the middle of summer, harrowing every half day up to the plow to prevent the formation of clods. The plow should run seven or eight inches deep, unless the land has formerly been plowed only three or four inches deep, in that case plow an inch deeper than the land has been plowed before. Keep the land well harrowed so as to kill the weeds and keep in moisture until about the first of September, then sow alfalfa seed broadcast at the rate of about twenty pounds to the acre and cover it by means of a drag harrow. If the season is favorable, this will give a good stand. If the fall turns out to be exceedingly dry, the stand will fail. In that case the seeding should be repeated on the same land in very early spring.

"On uplands that are not in very good heart it is wise to go to some trouble in preparing it for alfalfa. A good course to pursue is to sow rye in the fall of the year. When this rye is heading out next spring, turn it under good and deep with a turning plow, harrow immediately, slanting the teeth of the harrow so as to drag out the rye. Let the land lie about six weeks to give the rye time to decompose thoroughly and let the rains wash out the resulting acids from the soil. It is a good thing to apply about twenty bushels of lime per acre at this time if it is available. This lime should be air-slaked, sown broadcast and harrowed into the surface. After the rye has had time to rot and the acids to be washed out, sow an early variety of cowpeas, such as whippoorwill. Cut these for hay the latter part of August. After the hay is off, disk the land thoroughly and sow alfalfa as above indicated. It is very important that alfalfa be allowed to go into winter with a good covering, which may be secured by leaving a growth of at least six inches on the field in the late fall.

"The worst trouble that will be met with in growing alfalfa in South Carolina will be the presence of weeds, particularly crabgrass. The remedy for weeds other than crabgrass is to mow frequently the first summer. The mowing will not hurt the alfalfa and it will discourage most kinds of weeds. If crabgrass appears in the alfalfa, a different course must be followed. Mow the field and put a heavy drag harrow upon it with the teeth set fairly straight. In this manner it is possible to harrow the crabgrass out, for it is easily pulled up, while the alfalfa will be harmed very little, if any.

"On good land that is free from weeds, in a favorable season, alfalfa ought to make four crops of hay the first year after fall sowing. The second year it will make four crops better than the first. There is one small field of alfalfa

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ALFALFA ON CHARLESTON COAST LAND.

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in South Carolina sown sixty-nine years ago on which there is still a moderately good stand, so that it would seem the crop is long lived.

"The alfalfa crop may be made use of in three ways with very great advantage: First, it furnishes an abundance of very valuable green feed for summer; second, it furnishes a large amount of very fine hay, which is so rich that even hogs may be wintered on the dry hay. They will not make any gain on this hay, but if given an abundance of it they will not lose weight. The third use is for hog pasture. A good stand of alfalfa on good land will carry from five to eight head of hogs per acre during the whole summer season, and if these hogs are fed from one to three ears of corn per day they will make rapid growth and produce pork very cheaply.

"Alfalfa also makes very good pasture for horses and mules, but is dangerous for cattle and sheep on account of bloat. There is danger from bloat only when cattle and sheep are allowed to run upon alfalfa pasture, not when it is cut and fed to them or when the dry hay is given them.

"A very good way to utilize alfalfa in building up worn-out soil is to use a field of it for hog pasture, feeding the hogs some grain. After three to five years' use in this manner, put another field in alfalfa and plow up the first one for corn or cotton. The alfalfa plant, like all legumes, has a marked fertilizing effect upon the soil, supplying an abundance of nitrogen. It is a crop worthy of cultivation all over the country."

Broom Corn.—A crop that will, no doubt, soon assume some proportions in this State, following the advent of Middle West settlers, is broom corn. There seems no reason why this crop cannot be most successfully introduced in South Carolina.

BROOM CORN IN SOUTH CAROLINA.

1900. Counties.	Acreage.	Yield in Pounds.
Barnwell	12	8,400
Greenville	Less than 1	10
Hampton	7	2,000
Laurens	Less than 1	10
Richland	2	840
York	Less than 1	20
Total	21	11,280

Broom corn, experts claim, will grow well in any portion of the State. For some years a considerable quantity was raised in the Beech Island section of Aiken County and was sold to broom factories being operated in Augusta, Ga. There are about 180,000 acres of land in the United States devoted to broom corn, the average value of the crop being about $20 per acre. Coles County, in Illinois, produces one-fourth of all the broom corn in the country.

In Oklahoma the acreage is increased from 59 in 1889 to something like 15,000 at the present time, with a yield of over 3½ million pounds, making that State the fourth broom corn producing State in the Union. The industry was started as an experiment there and the success speaks for itself. There is no reason why South Carolina could not likewise take a permanent place in the production of this plant. This is particularly true when the large number of brooms used by the people of South Carolina and in the South Atlantic States is considered. Again, the grain can be freely used for poultry. At the State Hospital for the Insane the authorities manufacture their own brooms, but they send beyond the borders of the State to get the broom corn.

There are in South Carolina six broom manufacturing concerns, located respectively in Horry, Charleston, Anderson, Spartanburg and Abbeville Counties. At Yemassee there is a factory in operation, which, when visited, was using Illinois grown corn, but it had been using the South Carolina raised product, grown by the proprietors on a place near Yeamssee, and the brooms were in every respect as good as those made from the Illinois material. It is said that the land is better adapted for this crop than any of the soils out West. Broom corn is a cash crop, and, like other cash crops, has its favorable and unfavorable features. Its cultivation on a very large scale is seldom successful, but if properly handled on a small scale, say from 15 to 25 acres for the average farmer, and especially on new land where the variety of sure crops is limited, it will prove to be as paying as almost any crop that can be raised. South Carolina has early seasons and can market the brush early in the season, and for that and other reasons should easily become a great resource of the nation's supply of broom corn.

Matting Rush.—One of the most interesting things of recent years in South Carolina agriculture has been the experimentation of the United States Government to ascertain if matting rush can be grown on the coast and particularly in the abandoned rice plantations. These experiments have been conducted on Cat Island, off Georgetown, and have thus far proven eminently successful and very

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encouraging. The United States is importing steadily increasing quantities of floor mattings made from several species of aquatic rushes and sedges, principally from the Japanese rush. In 1906 this country spent over $4,000,000 for such importations, notwithstanding that looms have been invented in this country which will immensely reduce the first cost as against the hand-weave system employed in the manufacture of the mattings we now import. The Japanese rush has proven adaptable to the soils, and there seems to be no doubt that the industry will rapidly develop and become one of the principal sources of revenue in the coastal region.

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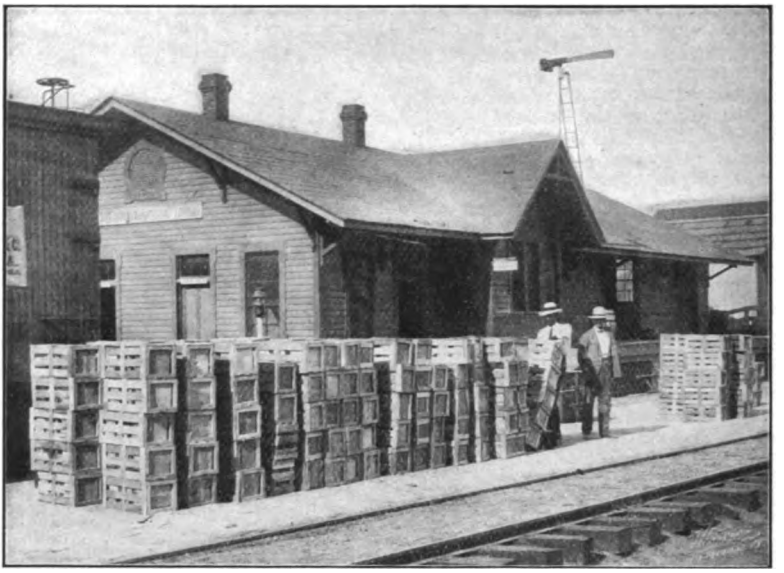


IN A CLARK'S HILL ORCHARD.

Chapter IX.

Horticulture

In the absence of a horticultural survey of the State, which it is to be hoped will be made ere long under the supervision of the State Entomologist, it is only possible to treat of this subject in the most practical and business-like manner. South Carolina, from mountain to seaboard, is undoubtedly well suited for fruit growing of all varieties. The famous ridge country fruit belt is one of the best in the United States, sending to the Eastern markets the choicest and most valuable peaches there sold, and at the earliest date. Occasionally a frost nips the buds, and a season is lost, but to lose one season in four is profitable to the fruit raiser, owing to the prices his product commands in the successful seasons. The possibilities of orchard products in South Carolina are practically unlimited.



A MORNING'S SHIPMENT AT RIDGE SPRING.

The Ridge Section extends from Leesville, on the line of the Southern Railway, to Aiken and to Clark's Hill. At Ridge Spring are the large orchards of the pioneer growers, the Watsons, the Cullums, the Williams, the Merritts, the Asbills, and others. Prosperous orchards are found at Leesville, Batesburg, Monetta, Johnston, Trenton, and near Aiken, in this belt. In the illustrations herewith appear pictures taken from the orchards at Ridge Spring, Clark's Hill in Edgefield County, and other growing localities.

In addition to the Ridge peach belt may be named a fruit growing section of the Piedmont which is thus described by Hammond: "Rich Hill, Pacolet Township, Spartanburg County, a high plateau, six miles in extent, between the Pacolet and Fairforest Rivers, is unequaled for the production of fruits of all kinds.

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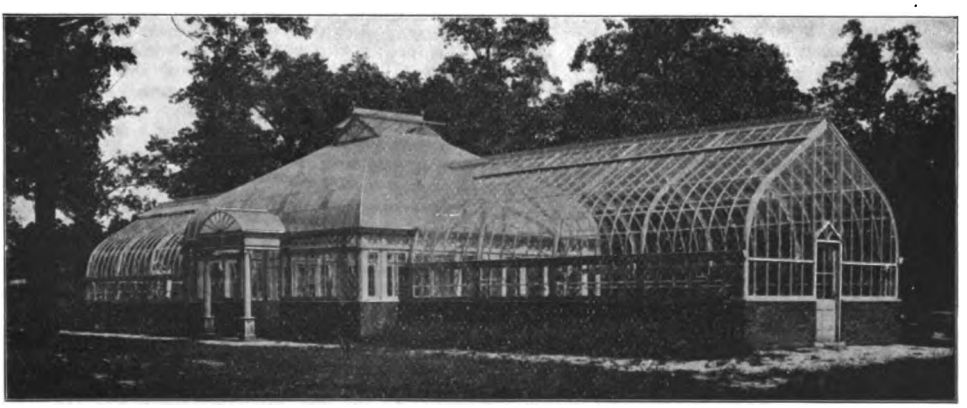
Frost has injured it but once in forty years." This section, while excellent for fruit growing, has been doing nothing of recent years towards shipping fruit to the Eastern markets.

Speaking of the Coastal Region, Hammond says: "The olive and orange trees bring their fruit to full perfection on the South Carolina coast. Once only during a period of sixteen years previous to 1880 were the orange trees injured by frost, when the tops of about one-fourth were killed, while the roots put out fresh shoots; the fruit from single trees in the neighborhood of Beaufort has



IN THE ORCHARD AT CLARK'S HILL.

had for a series of years sold for $150 to $250. The oranges of this region bring a high price in the market and are thought superior to those grown further south. Even the banana, with a not expensive winter protection, has been made to ripen its fruit. Fig trees of every variety, with little or no attention, grow everywhere and produce several abundant crops yearly; so that, could process similar to the Alden process for drying fruit be adapted to them. they might become an important staple of export. The wild grapes, which attracted the notice of the first French colonists in 1562 still abound, and perhaps the largest grape vine in the world is one eighteen inches in diameter near Sheldon Church, Beaufort County."



THE HORTICULTURAL BUILDING AT CLEMSON COLLEGE.

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In McCrady's History it is said that "The English colony, led by William Sayle, which afterwards settled permanently at Charleston in 1670, report seeing on St. Helena Island many peach trees."

In Beaufort today are found orange and olive trees, and also the camphor tree, but from a commercial viewpoint there is nothing of consequence resulting.

In the lower portion of the State there is a good commercial peach orchard near Jamison, in Orangeburg County; and there are three or four fine orchards, the leading of which are the "Middleton" and "Seven Oaks" orchards, at Clark's Hill, in Edgefield County. North of Seneca, in the Piedmont, there are some fine young peach orchards, and the "Latimer" orchards at Belton, in Anderson County, are worthy of note.

Around Easley and Spartanburg, in the Piedmont, there are orchards, but none of them are doing well. Extensive peach orchards full of promise exist in the immediate vicinity of Orangeburg.



ORCHARD SCENES IN CHESTERFIELD.

Richland, Greenwood, Aiken and the Alpine counties all have good vineyards, which have in the past given excellent results, and which in the future promise remunerative prices for their products.

In the mountain districts the "Buncombe" apple will ever command a good price; it reaches the market in Greenville. The "Ben Tillman" apple has been evolved near Seneca and always commands a ready sale.

From what has been said it is easy to gather that the horticultural sections of South Carolina are the famed "Ridge" peach section, comprising the counties of Chesterfield, Kershaw, Richland, Saluda, Aiken and Edgefield, most of which are in the Sand Hill Region; the portion of the Piedmont Region along the Pacolet River, and the extreme Piedmont and Alpine Regions. That there are fine opportunities along the coast, particularly on James Island, where every variety of orange is grown, goes without saying.

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SHIPPING FRUIT AT CLARK'S HILL.

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Fruit Growing

To mention this industry is to mention the name of R. B. Watson, the pioneer fruit grower of South Carolina. What this citizen of Saluda County has done for the peach growing and shipping industry is hard to estimate. He was the first to grow the peach for Eastern markets, and he is still doing so, having in the meantime induced many others to do likewise. Today the largest shipper is T. S. Williams, who does not confine his shipping operations to South Carolina.

In the last few years the San Jose scale has tackled the peach industry in South Carolina, but the State Entomologist is ever alert, and intelligent fruit growers are obeying his instructions and finding the scale a blessing to the wide-awake and intelligent grower rather than a drawback. They are spraying and getting fine results.

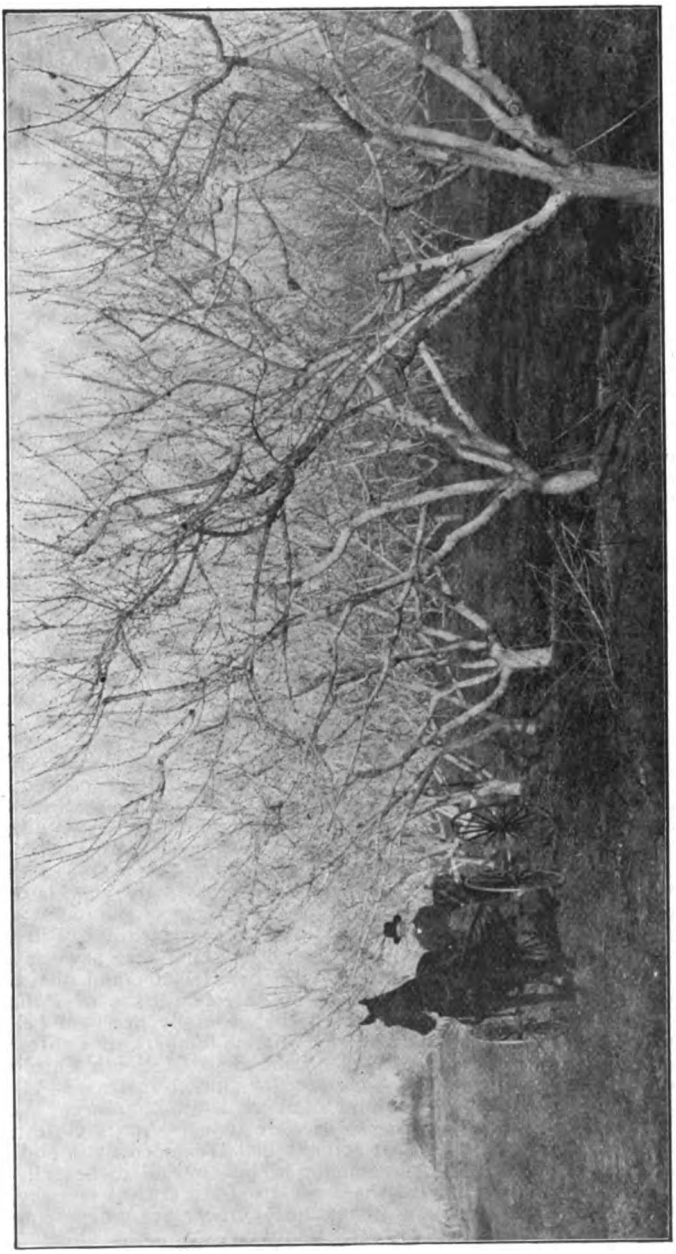
Information for the Fruit Grower.—Budded fruit trees ought to be had at from $20 to $25 per 1,000; sometimes they can be bought as cheap as $15 per 1,000. One-year-old trees can be obtained from $25 to $40 per 1,000. There are many reliable nurserymen from whom the trees may be had, but perhaps it would be best to secure them either from Augusta, Ga., which is near Aiken, or from Ridge Spring, also near Aiken. As to the time of planting the trees, this can be done at almost any time of the year between November 1st and March 1st. Fall planting is preferable, but fruit growers often do well with spring planting. The trees are planted 16 feet apart in squares on poor land and 20 feet on good land. Trees are often planted in parallelograms 15 by 30 feet, which space allows plenty of room for other crops that will pay expenses until the trees begin to produce a crop that will be profitable. One-year-old trees are preferred for planting, though many persons prefer June buds. Such an orchard will pay in three years' time. When cotton is grown on land where young trees are planted, this crop will pay expenses, and will, with favorable seasons, pay all expenses until the trees grow to a paying crop. An orchard will last for 20 years before the trees are considered useless. One of the most experienced peach growers in the State has some excellent trees in his orchards, which are on good lands, that are 23 years of age. One of the oldest and best peach growers in the fruit section near Ridge Spring writes: "I have been growing fruit since 1867 and have never found anything that pays as well."

Tropical and Sub-Tropical Fruits.—On the Sea Islands and the coast of South Carolina these fruits grow well. From a recent issue of *Philadelphia Grit* the following is taken: "It has been the generally accepted belief that olives were first grown in America by the Mission Fathers of California, but the first olives in America were planted on the coast of South Carolina long before colonial times. During the American Revolution there was a ten-acre bearing olive grove on the south shore of Port Royal entrance. When the Civil War commenced some of these trees were living. At its close only the stumps remained. It is supposed that soldiers had encamped there and cut the trees down for fire wood. The surrounding woods is said to be full of wild olive trees, the birds having carried the seeds from the ancient trees. The old olive grove was on the 'Foot Point' plantation." Olives are today being grown in Beaufort.

Speaking of the olive and the orange and this class of fruits, The Hammond Handbook of South Carolina (1882) says:

"At this time delicious oranges are being grown at Beaufort and on James Island; on the latter also are being grown splendid specimens of grape fruit. At Beaufort one finds also the camphor tree being successfully grown."

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FULL GROWN PEACH TREES SPRAYED.

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In Chesterfield.—In this county the possibilities in the line of fruit culture are but little known; in fact, they have not been tested in a commercial way except by a few individuals.

"The writer having had considerable experience in the peach business in all its branches, not only in South Carolina, but in Delaware and New Jersey, and having just returned from a trip to the most famous peach growing section of this country, Fort Valley, Ga., takes pleasure in supplying the following information: There are no other orchards in our immediate vicinity here, for ours is practically an experiment, though we have every reason to believe in our future success. We are located on what is a continuation of the Pinehurst,



THE SPRAYING APPARATUS.

N. C., range of hills, though much farther south. Judging from the few peach trees around houses and in home gardens, we are unable to trace an entire loss of crop for the past 25 or 30 years, still they often miss in the surrounding low country. We have 16,000 trees, 10,000 of them four years old and to fruit next year. They are perfectly healthy in every way and extra well grown.

"I saw no trees during my visit to Fort Valley, Ga., that were any better for their age. The varieties are 'Admiral Dewey,' 'Greensboro,' 'Carmen,' 'Belle of Georgia' and 'Elberta.' The soil here is for the most part a sandy loam, with a clay subsoil, naturally well drained, adapted to all kinds of tree fruits, as well as small fruits, such as grapes, strawberries, blackberries, etc.

"There is, I suppose, easily over 100,000 acres in this section suitable for fruit



THE EXPERIMENTAL CHESTERFIELD ORCHARDS.

plantations, within, say, five miles of railroad. This land can be had for $10 up per acre. We usually plant peach trees about 15 feet each way, which gives you 170 trees per acre; trees can be brought to bearing at an average cost of 40 cents per tree or $68 per acre. I believe there is a great future for Chesterfield County in the peach as well as other fruit enterprises, either on a small or large scale. Certainly it has never been my lot to see a place where they can be brought to bearing with as small cost as here."

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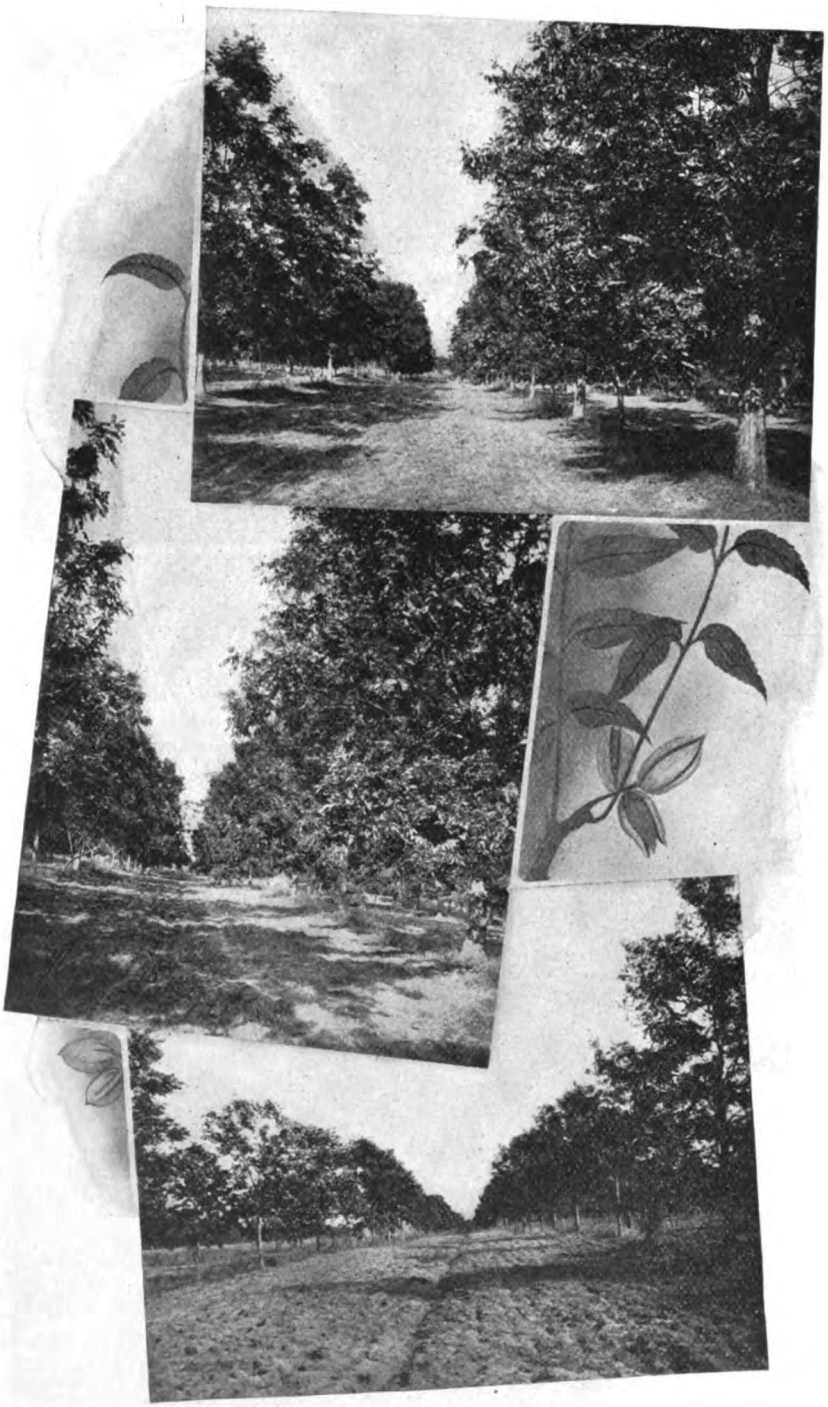
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Pecan Groves

It is perhaps not generally known that South Carolina possesses the largest single pecan grove in the United States, it being located in Christ Church Parish, Charleston County, yielding about eleven tons of nuts annually. The only report of the number of trees in the State that is available is that for the year 1899, which showed at that time 9,959 trees, yielding 13,020 pounds of nuts. The largest number of trees were reported in Hampton County, 4,056, and the next largest number was reported for Bamberg County, 1,457, Orangeburg County following with 937 and Darlington with 496. Charleston was reported at that time to possess 307 trees. There was not a single county in the State in which the growing of these trees was not reported in 1889. Some of the prettiest trees in the State are to be found at present in the counties of Orangeburg and Newberry. In the latter county near Blair's, on the place of Ellison S. Keitt, there are a number of pecan groves valued at about $50,000.

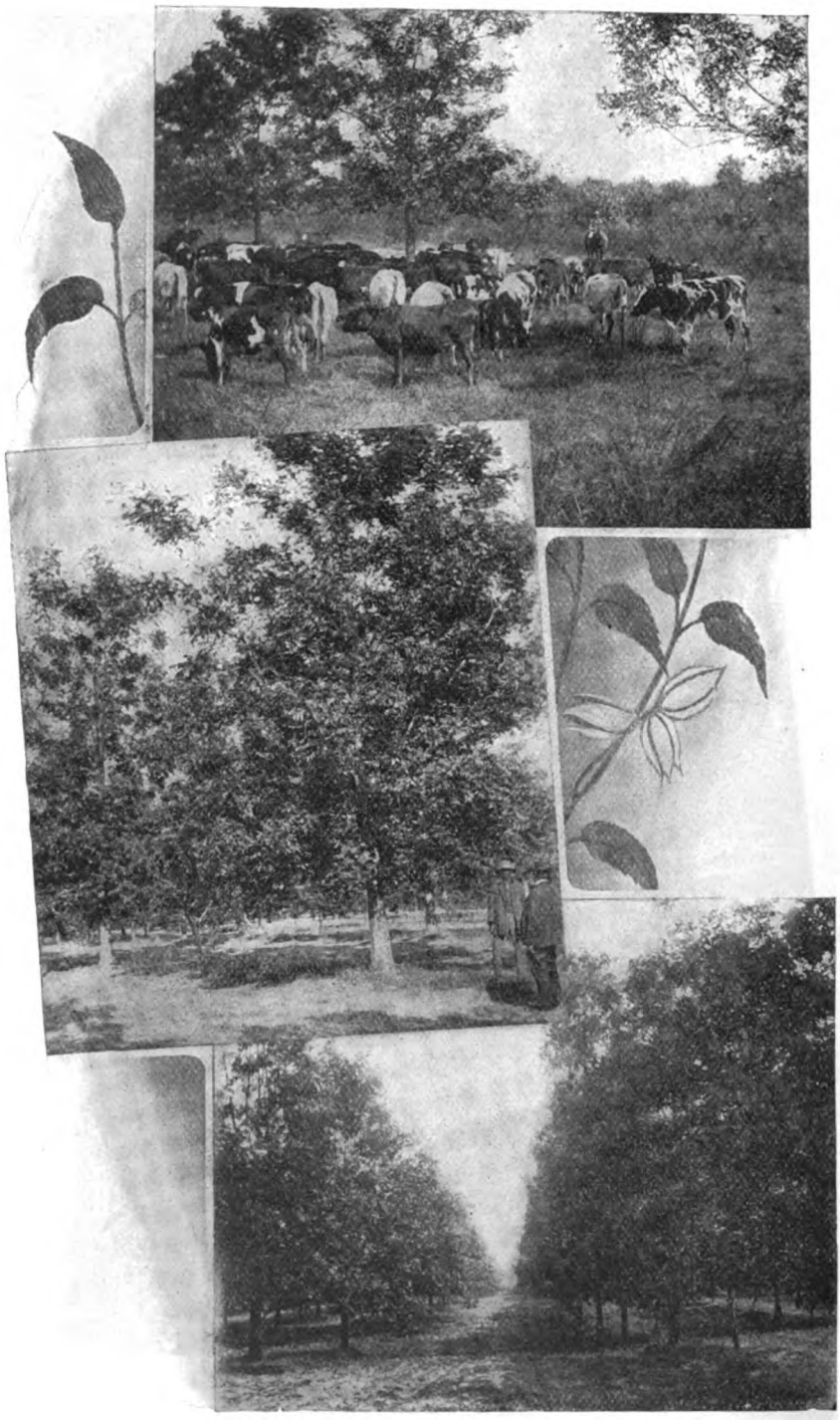
In Orangeburg, M. O. Dantzler has a fine grove of about 10,000 trees, planted 110 to the acre; in St. Matthews there is a fine grove, and in other portions of the State pecan trees worth much are to be found.

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HORLBECK'S PECAN GROVES.

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PECAN GROVES IN CHARLESTON, WITH CATTLE AS AN ADJUNCT.

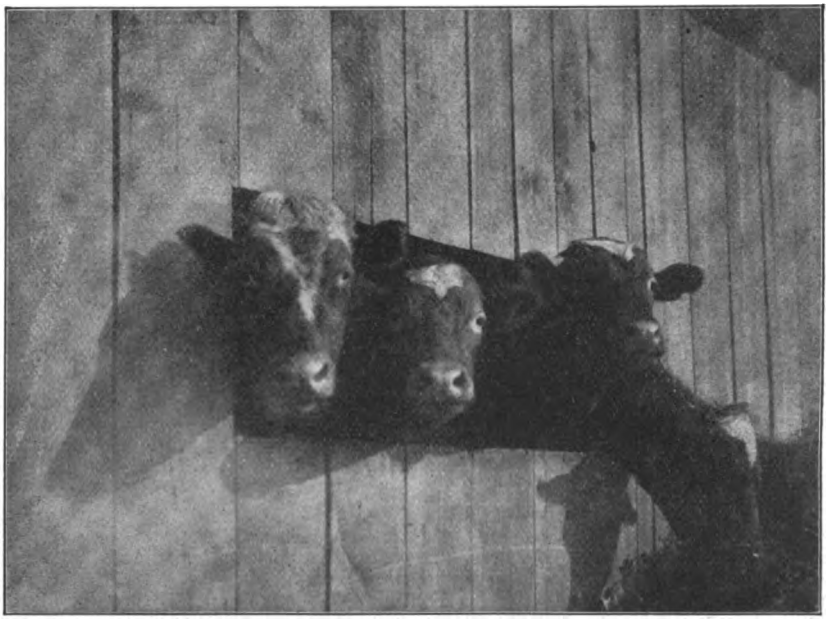
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Chapter .

Live Stock

The live stock industry in South Carolina is not what it should be, and it will not be, perhaps, until fence laws are raised to the standard of the Middle West and Western States. It is true that Carolinians have from the earliest days been lovers of the ideal in live stock, but the industry as a whole has languished, and properly, owing to the "no fence" law and the lack of any adequate law controlling the running of dogs at large.



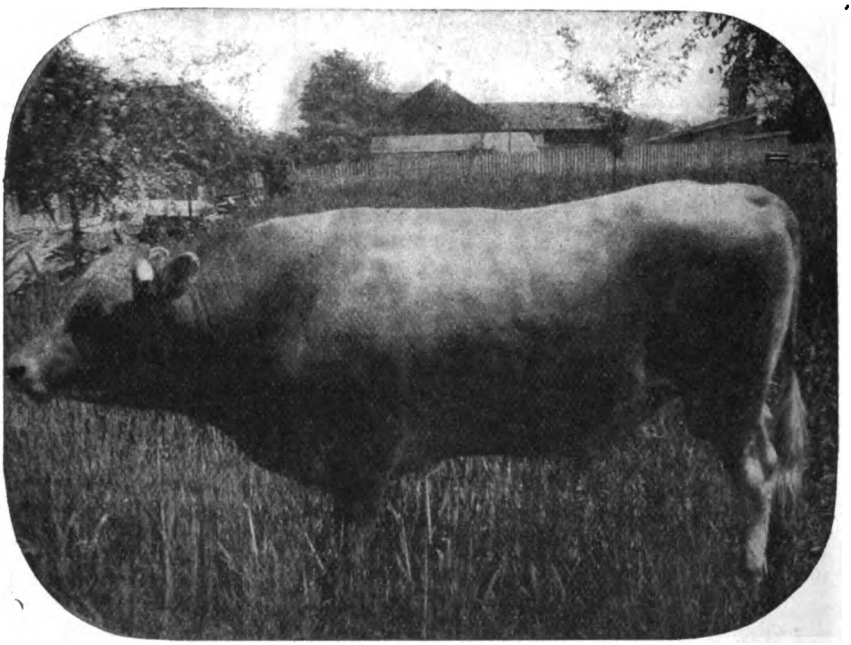
A GROUP OF SHORTHORNS.

In the very earliest history of the State it is clearly demonstrated that this was primarily a live stock section. Indeed, conditions became such in the early days that posses had to be organized and sent out to destroy wild cattle—cattle that had wandered into the interior and gone wild. Horses the Indians did not have when the first settlers came to South Carolina. How they were introduced

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is a mooted question. It suffices to say that the colonists got them, as they got cattle.

According to McCrady, in a report to his Majesty by William Gerard de Brahm, Surveyor for the Southern District of North America, made in 1773, for the years from 1764 to 1772, we have much valuable and interesting statistical information in regard to the province at that time. "De Brahm says that the cattle had so increased in the province that all pains would prove in vain to number them. The province was rather overstocked, and, in order to make room for the immense increase, great herds had been driven into the neighboring province of Georgia, there spread between the Savannah and Ogeechee streams since 1757, and there kept in gangs under the auspices of cowpen keepers, who move (like unto the ancient patriarchs or the modern Bedouins in Arabia) from forest to forest as the grass wears out or the planters approach them. The cowpen keepers determined the number of their stocks by the number of their calves, which they marked every spring and fall; if one marked 300 calves per annum, he reckoned his stock to consist of 400 heifers, 500 cows and 300 steers—in all, 1,500 heads, besides horses; this proves, he observes, that not even a cow



EXILE'S LORD NEWBERRY, OWNED BY JOHN SCOTT, OF NEWBERRY.

keeper knows the true number of his own cattle. If they sell a stock of 300 heads, they allow 124 cows, 80 steers, including the bulls, 90 heifers and 6 horses, which they sell for 300 pounds sterling, and deliver them gratis on the other side of one, two or three navigable rivers, according as the cow keeper is in want of selling."

South Carolinians have ever, and are to this day, fond of horse-racing and of pure-blood stock, and the history of the sport between 1734 and the outbreak of the War of the Revolution makes exceedingly interesting reading. All along the coast great attention was given to the breeding of fine horses, and horse-racing became so general that the Continental Congress finally prohibited the sport, but this did not, however, have much effect, as war would have ended it for the time being anyway.

Since the war horse-racing has proven a favorite sport, and there are annual racing meets in various portions of the State.

South Carolina has not maintained her record as a live stock State. To look even at the conditions in 1880, and compare them with the conditions of today, is not attractive.

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SPECIMENS OF A HANDSOME COLLECTION OF SHETLAND PONIES.

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1880 Conditions.—These conditions were in 1880 summarized as follows:

In the Coast Region the work stock numbers 7,692 animals, being eleven-hundredths of an animal per capita, which is more than the ratio in the Lower Pine Belt, but less than that of the other regions. The work stock per square mile is 4.5, being greater than any other region except in the Upper Pine Belt and Piedmont Regions. The total of all stock, including work stock, is 43,946, averaging 25.8 per square mile, against an average of 57.1 for the whole State, and 0.65 per capita, being a little less than half the average of the whole State, which is 1.27. This is an increase since 1870, the average then being 9.4 per square mile, and 0.70 per capita.

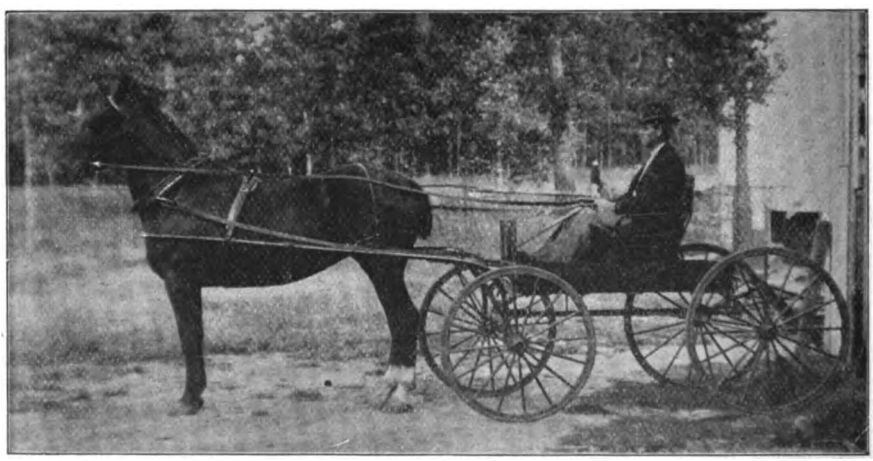


A GROUP OF GOOD HORSES.

In the Lower Pine Belt there are 1.8 head of work stock and 23 head of all live stock to the square mile.

In the Upper Pine Belt the live stock numbers 313,811, which is one to every 13 acres; 16 to each farm; 11.4 head to each one of the population; 2 to the bale of cotton, and 1 to every 11 bushels of grain produced.

In the Red Hill Region the work stock numbers 7,663, not quite 5 to the square mile; 1 to every 30 acres of tilled land, and to every 6 of the population.

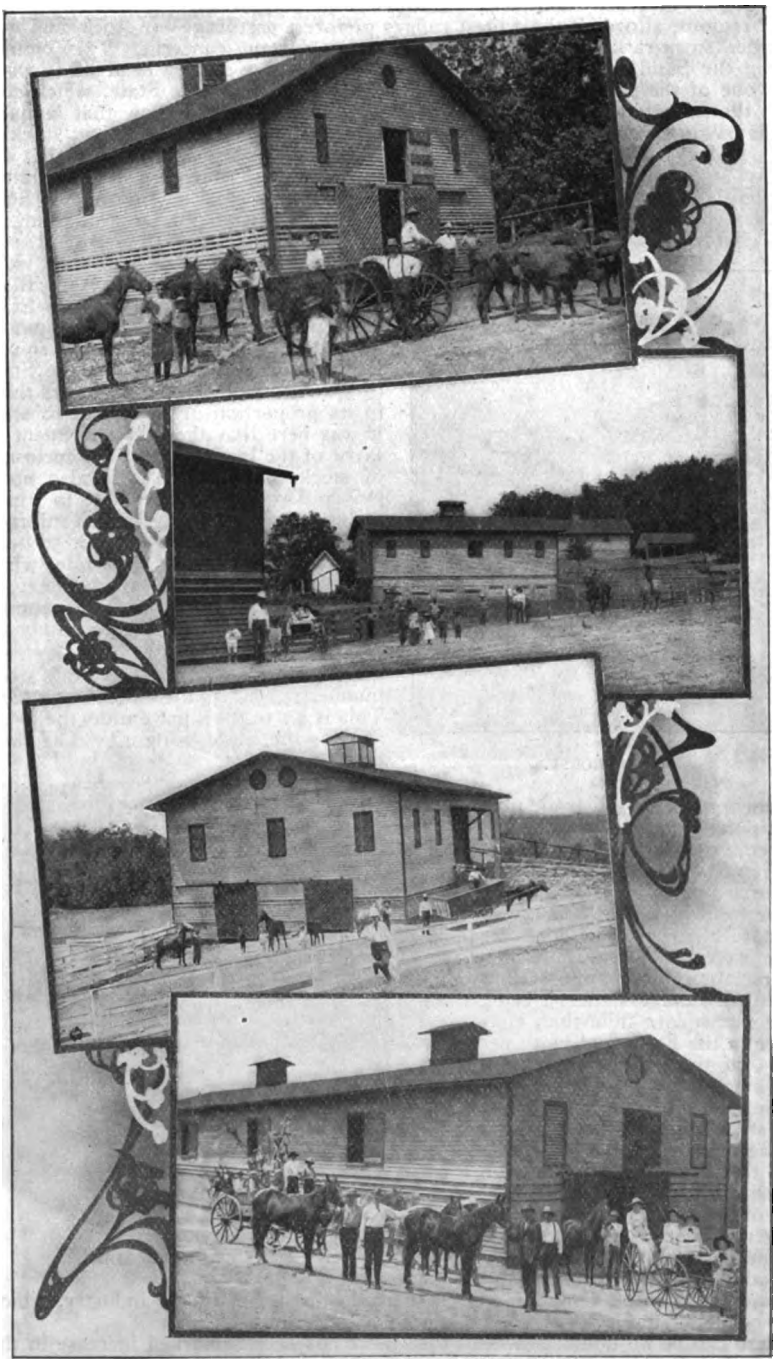


A COACH HORSE.

The live stock is 61,569, chiefly hogs; 38 to the square mile, and nearly 1 to every 4 acres of cultivated land.

In the Sand Hill Region "the work stock numbers 8,518, being 3.8 per square mile, which is less than in any region of the State, except among the extensive unimproved forests of the Lower Pine Belt, where the proportion is only a little more than half the above. The ratio of work stock to population is 29-100 to 1, being nearly double the average of the State. There is 70,901 herd of all kinds, being only 29 to the square mile, which is 8 less than the average for the State, and less than anywhere in the State, except upon the seacoast and in the Lower

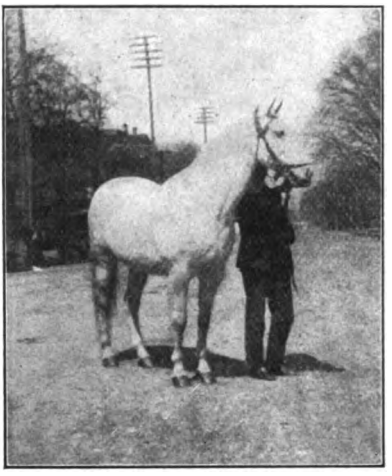
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HOW LIVE STOCK IS CARED FOR BY A. T. SMYTHE.

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Pine Belt. This statement will doubtless seem very strange to the farmers in these regions, affording the widest ranges of forest pasturage for stock, and who consider stock-raising as one of their most important concerns. This opinion among the Sand Hills arises from the fact that there is 2.47 head of stock to each one of the population, nearly double the average for the State, which confirms the importance of their stock to them, while it fails to show that lands in woods pasture, with freedom of range for stock, give as much return in stock as lands under cultivation. On the contrary, tables here appended show that the amount of live stock per square mile increases with the increase in the number of tilled land per square mile. Whence it follows that stock-raising in this State has passed out of that early condition of things, when wild stock roaming at large yielded the largest return."



A DRAFT HORSE.

In the Piedmont Region the work stock is 1 to every 27 acres of tilled land, the average for the whole State being 1 to 18. The live stock number 473,180. This gives 45 to the square mile, agianst an average for the State of 37. Although this region ranks third in its proportion of live stock to area, it was here that the first movement in favor of the law requiring the enclosing of stock took place. It is also noteworthy that the counties here in which the enclosure of stock has been enforced by law for some years support 50 head of livestock to the square mile, while in the four counties in which the stock have enjoyed the freedom of ranging wherever they could, support only 36 head to the square mile.

In the Alpine Region the work stock number 5,798, against 4,096 in 1870. This is 4.1 to the square mile, the average for the State being 4.4. The ratio of work stock to the population is less than elsewhere in the upper country, but more than in the regions below the red hills. There are 22 acres of tilled land to the head of work stock, which is more than elsewhere in the State, except in the red hills and the metamorphic region. Other live stock numbers 66,035, being more per square mile than elsewhere in the State, and more per capita of the population, except only among the sand hills.

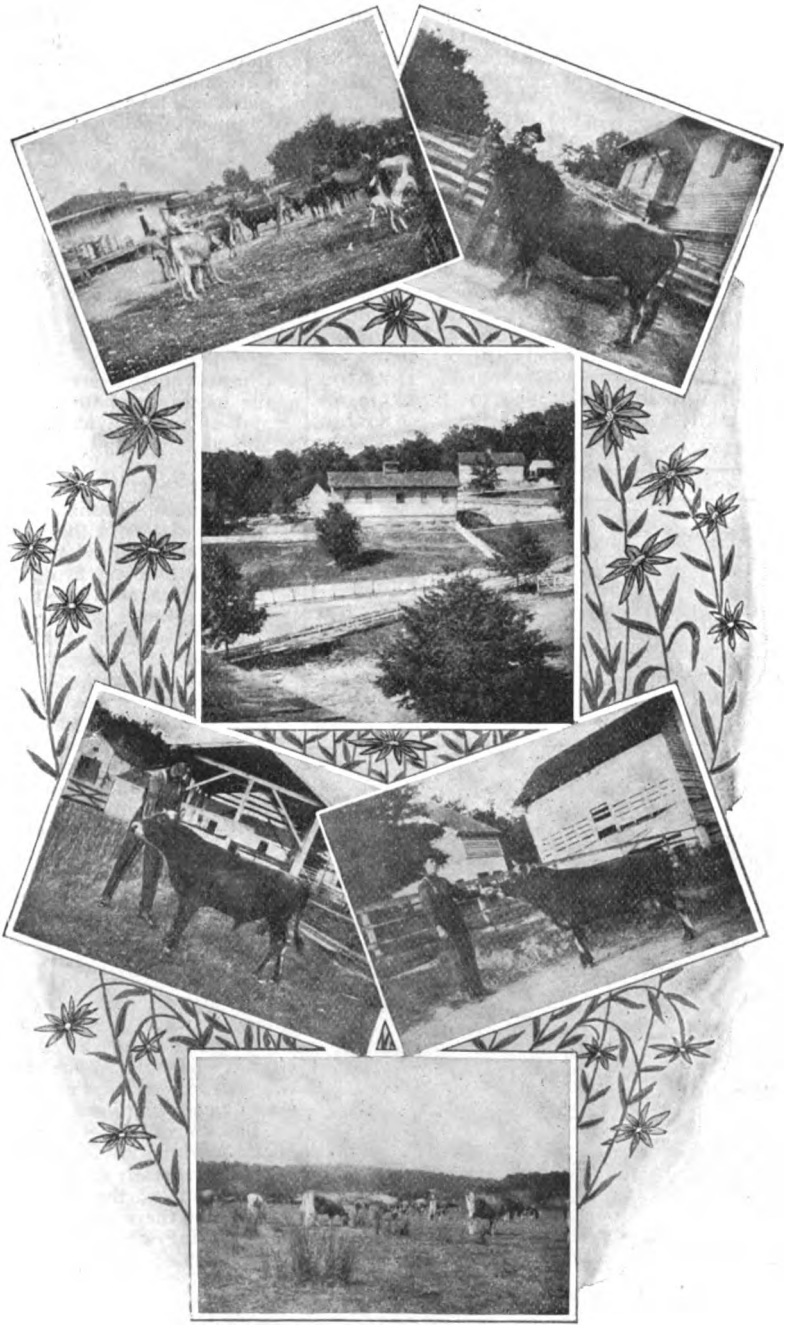


SOUTH CAROLINA RAISED MARE.

The present condition of the live stock industry is shown in the accompanying table, giving only the figures available, and, consequently, a very inadequate idea of the development of the industry. There has been a noteworthy increase in the number and value of cattle, of horses and mules, and of swine, but figures as to the other branches of the industry, which have no doubt increased with equal force, are wanting.

There can be no doubt, however, that there has been a marked increase in the live stock industry in the past six years.

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LIVE STOCK IN THE PIEDMONT.

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HORSES.

	Number.	Avg. price per head Jan. 1.	Farm Value.
1906	83,026	$126.00	$10,437,182
1905	82,204	115.62	9,504,033
1904	74,731	88.45	6,610,239
1903	73,991	84.64	6,262,562
1902	72,540	72.13	5,232,590
1880	60,660	.....	.....

In regard to horses, the statistics herewith afford an interesting study. That there has been a steady increase in this respect is shown by the figures. South Carolinians, as previously indicated, take a great pride in their horse flesh, and this is at this time more generally the case than ever before.

MULES.

	Number.	Avg. price per head Jan. 1.	Farm Value.
1906	134,690	$153.00	$20,598,121
1905	124,713	133.35	16,630,500
1904	106,592	110.20	11,746,672
1903	105,537	99.59	10,510,088
1902	103,468	94.73	9,801,640
1880	67,005	.....	.....

In this regard South Carolina has made considerable headway, particularly since 1880, and today stands several million dollars ahead of her decade value. The accompanying figures show the increases in total value, and of the individual farm animal.

HOGS.

	Number.	Avg. price per head Jan. 1.	Farm Value.
1906	678,205	$ 5.60	$ 3,797,948
1905	664,907	5.40	3,590,498
1904	664,907	5.52	3,670,287
1903	651,870	5.64	3,676,547
1902	614,972	5.88	3,616,035
1880	628,198	.....	.....

In South Carolina, as in but few States in the Union, the development of the hog-growing industry is needed. This statement is due to the fact that hogs can be produced as cheaply in South Carolina as in any other State in the Union.

"The few States," says a United States expert, "comprising the corn belt are in reality the source of supply for a great amount of the meat product, especially hams and bacon, that is consumed in other portions of the country. Yet the advantages of many of these corn-belt States are little, if at all, superior to those outside of that district. The South has an abundance of vegetation. Cowpeas, velvet beans, and peanuts are leguminous crops that are peculiar to that section. Corn grows readily in all parts of the South, and in the subtropical portions the experience of feeders with cassava seems to indicate that it has considerable value for pork production. In addition, there is generally an abundant water supply; the climate is mild, and there is a long period during which green feed is available; the expense of



PEE DEE HORSE FLESH.

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shelter and winter feeding is very greatly lessened. These conditions, giving a long period of pasture and outdoor life, enhance thrift, and, with proper management, insure great freedom from disease."

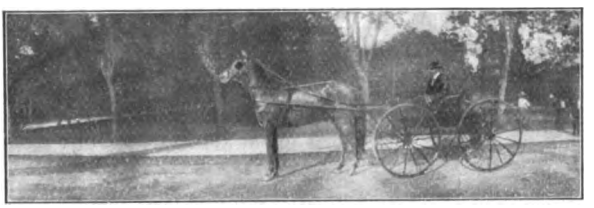


A BUGGY HORSE.

Says the same expert: "Corn is, perhaps, with a favorable climate and soil, the most economical grain that is at the command of the stock raiser and feeder of the United States. It is nutritious and highly palatable. Without its use it is difficult to imagine how the animal products of the United States could have attained their present position in the world's commerce; and so long as meat products are a factor of American agriculture, corn will probably be a leading factor in meat production in this country, and the corn belt will naturally continue to be more or less the center of feeding operations. On the other hand, the condition is ever present that farmers in localities where corn is a limited product have their own wants to supply. If, in addition to their own needs, the farmers of these localities can supply a share of the export demand, great strides will have been taken in their agricultural development; for 'live stock husbandry is the foundation of successful agriculture.' A market for the surplus is, of course, essential, but where a supply is available the market will probably grow up. The condition of the meat trade at present indicates that a strong market is assured for a very considerable time to come. The statistics presented herein show generally an increased trade, both at home and abroad. The domestic consumption of all kinds of meats seems to be increasing, although the per capita amount cannot be shown with accuracy. There is little reason to fear that the further development of the pork-producing interests of the United States will soon result in overproduction."



A GOOD PAIR.

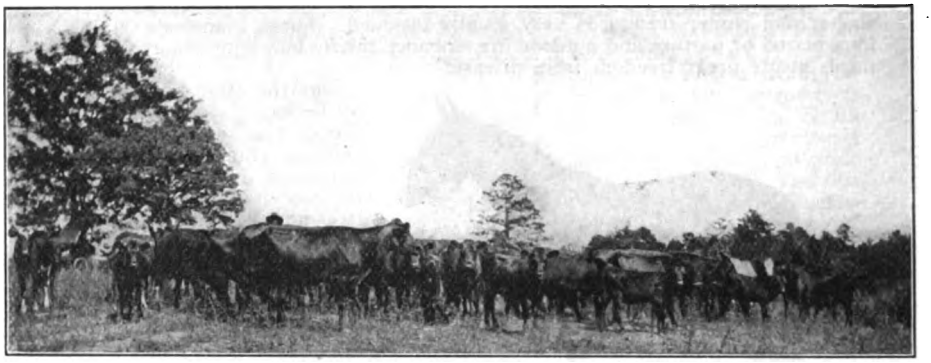


A BUGGY MARE.

The production of hogs in South Carolina in the past six years has increased at a gratifying ratio, as the figures show, and the value of hog products has almost doubled, though the number of animals has not. The necessity for raising home supplies has been impressed upon the farmers, and they have seen the wisdom of the advice.

In this general treatment of the live stock industry, other than the branches mentioned elsewhere, it shall not be the attempt to deal with those branches not so intimately connected with the agricultural industry of the State.

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2—CATTLE RAISING

In the matter of cattle raising the State of South Carolina has been backward for several decades. Lack of markets and of a general fence law have been drawbacks. But another drawback has been the Texas cattle fever tick, the eradication of which has not yet been fully established in the State. This is now being attempted, and successfully, in certain regions. The accompanying table shows the value of the cattle raising industry, other than dairy cattle, during the last few years.

CATTLE, OTHER THAN DAIRY.

	Number.	Avg. price per head Jan. 1.	Farm Value.
1906	218,502	$ 12.00	$ 2,619,840
1905	216,339	11.30	2,445,708
1904	173,071	10.92	1,890,053
1903	176,603	11.17	1,972,444
1902	171,459	9.76	1,673,542
1880	199,321	.....	.....

Cattle raising has recently gained great headway, owing to the establishment of a proper river warning service by the Federal Government, and other work directed to showing the farmer on the Piedmont hills the possibilities of the industry.

In several portions of the State high-grade cattle are raised and sold, notably by A. T. Smythe, in Anderson County, and John G. Mobley, in Fairfield County.

A Lesson in Cattle Raising.—Mr. W. R. Walker, proprietor of the Sunnyside Farms, located in Cherokee County, writing of his experience in starting the raising of cattle for beef market purposes, says: "About four years ago I bought seventy Aberdeen-Angus cows in calf from the Panhandle of Texas (above the quarantine line). With other purchases from other places, I soon had one hundred and fifty to two hundred cows, and, with pure-bred bulls in service, I have bred these cattle, selling some yearly, till now I have three hundred to three hundred and fifty in herd, the largest herd of Aberdeen-Angus cattle, I am told, east of the Mississippi River. They are now thoroughly acclimated, stand the summers all right, and are doing nicely. As most of the cattle came from above the quarantine line, or from the free-from-ticks section, it was important that I eliminate all ticks from my farm. This was done by changing the pastures and not allowing any cattle to run in a tick-infested pasture for at least one year. In this case, to run no risk, the cattle were not allowed in the infested part of the farm for two full years. At this time there is not a tick on the whole farm, and the neighbors took an interest in the matter, and I presume there are at least 6,000 or 7,000 acres in our neighborhood free from ticks.

"In breeding cattle for beef, the most important item is the feed. For two years we were compelled to buy cotton seed hulls and meal, a smaller quantity each year, till this year we hope not to have a pound to buy. And the great food producers are corn and sorghum, and peavine hay, but corn and sorghum are the main reliance. We cut all our corn with harvesters and shred it for stover, and find this the best roughness we can raise. This year we are filling a 250-ton silo with corn, cane and soy beans, and this will give us a well-balanced ration. Then we will have besides 250 tons stover, 200 tons cured sorghum and 300 tons

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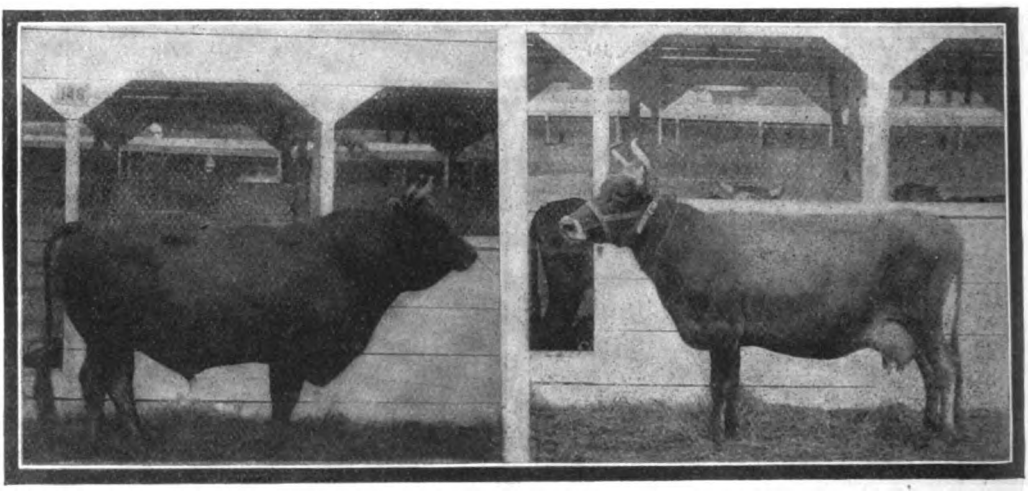


A DAIRY HERD.

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peas and sorghum for hay sown together and making good feed. We gave great attention to the pastures, cutting out as far as practicable all bushes, briars, etc., and giving the grass a chance. Bermuda roots were hauled fifteen miles and set out, and this makes the ideal pasture on bottom land, but Japan clover soon takes the Bermuda on upland. Still Japan clover is as good a pasture grass as we can get, but it needs sunshine, and all trees, etc., should be trimmed, all sprouts cut, and then an acre so cleared is worth five acres full of pines, briars and other underbrush. On our farms we sow peas in the corn, and when the corn is harvested and hauled out we turn the cattle on the land and let them glean it. We feed the cattle a little cured cane or hay about the middle of November or December first, and enclose them in a field with water running through it for the winter feeding. They are fed out in the field on stover and meal and other feeds, and the troughs are moved at least once a week. In this way the whole field is covered by April 15th, when the feeding season ends and the cattle go to pasture.

"To one who has never tried it, it is amazing how rich a field can be made by feeding cattle on it a winter. Some upland on the farm that five years ago would make twelve or fifteen bushels of corn per acre will this year make forty to sixty bushels, on an average on forty acres in the field, and land so manured will make this year one and one-half bales of cotton per acre. We do not use any commercial fertilizer on corn, and not very much on cotton. It is not needed. The cattle will do the work if given attention.

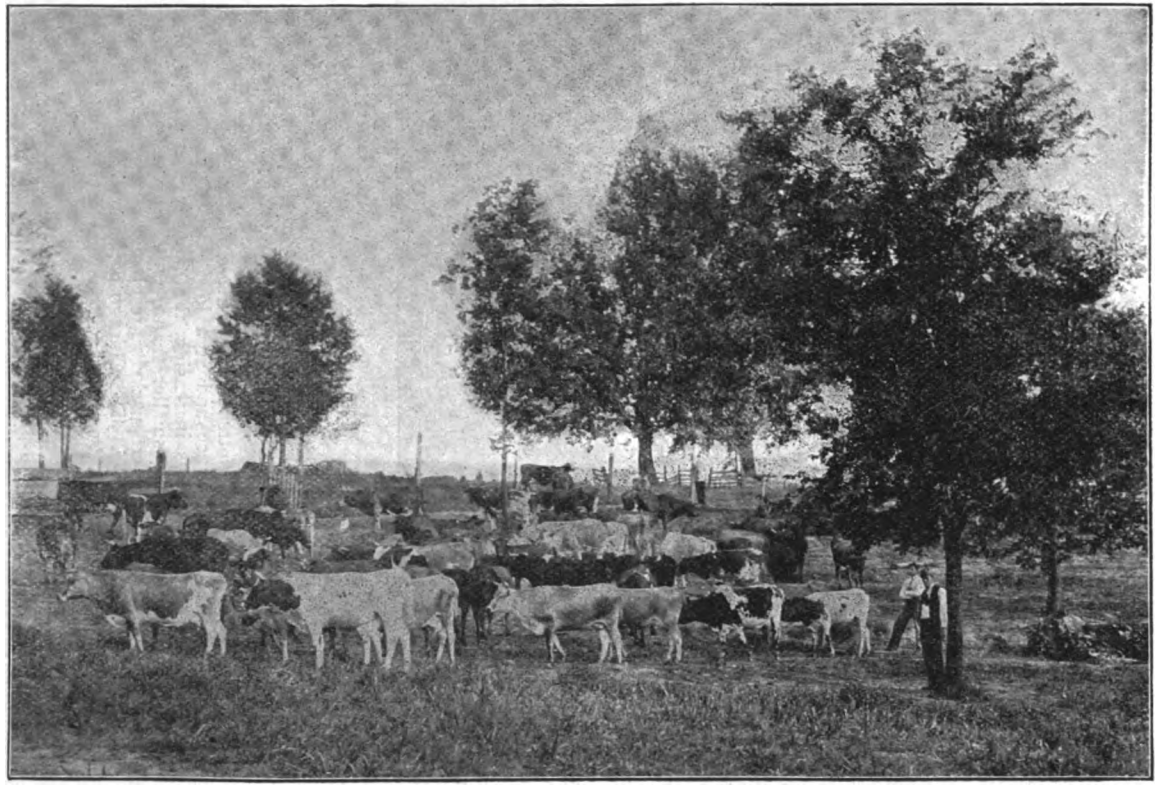


GOOD CATTLE.

"The Aberdeen-Angus cattle are purely a beef breed—not used for milking at all. The calves run with the cows, and in that way get all the milk and grow right along all the time. This breed of cattle comes from North Scotland, and are a very hardy breed. It was risky to have so many at one time in so hot a section as South Carolina, but they have suffered no ill effects from the heat, and are now well used to it. It has been found by experience that it is not only not necessary to house these cattle, but it is better not to do so. More cattle die from overheating than from cold. The Aberdeen-Angus enjoy the cold weather and look like they are laughing at you when there is snow a foot deep. All they ask you for is feed and lots of it, and this they should have, and must have, to do well. An old scrub will be humped up like a rainbow on a cold, drizzly day, while the Angus will be smiling at you and their backs as straight as a gun-barrel. They stay among the pines at night. One very great advantage the Angus has, it is polled or 'mulely.' This is a tremendous advantage, and makes this breed so valuable. While an old scrub cow will range herself alongside of the feed trough and hook and fight every other cow in reach, the Angus will crowd to the trough like pigs and never move till it is cleaned up. One can only appreciate this when he has noticed it.

"The Angus cattle are by all odds the best suited to our rough lands than any others of the beef breeds. They are rustlers, and will have feed if it is

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THE CLEMSON DAIRY HERD.

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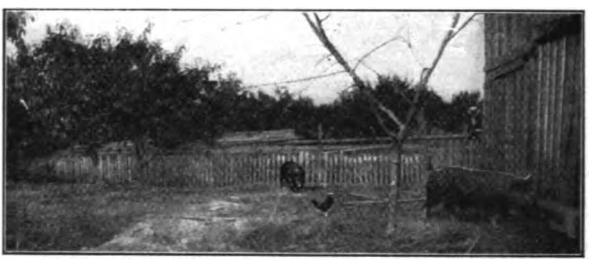
possible to get it. This breed also makes the choicest beef on the market. It has taken the prize for carload lots at Chicago for sixteen years in succession and makes the best beef to be had. While the ordinary scrub cattle will dress or 'net' about 48 per cent., a fat Angus steer will 'net' 65 to 70 per cent. This is a great consideration. They are 'ripe' or ready for market at thirty to thirty-six months old, and at that age, if well bred and well cared for, should weigh 1,200 to 1,400 pounds each. I sold about fifty head to one party in 1906, and he declared he had never in all his life seen cattle respond so quickly to feed, and, also, they made the best beef he ever saw. This seems to be the general verdict of all who have tasted fine Aberdeen-Angus beef.



A FINE BERKSHIRE.

"I might say that I am in the cattle business to stay, and am each year improving my pastures, improving the herd by selling off the least desirable cows, and doing all I can to have as good a herd as can be found in Iowa, and at the same time to increase the herd till I have all the pastures will feed during the summer and all I can feed during the winter, being careful to let them enrich some big field each winter, and to raise better cattle each year."

What Mr. Walker has done may be done in many other portions of the State. The cattle raising industry is really only dawning, when the splendid opportunities are taken into consideration, as to the available crops, such as Bermuda grass, Johnson grass, hairy vetch, the cowpea, and the clovers.



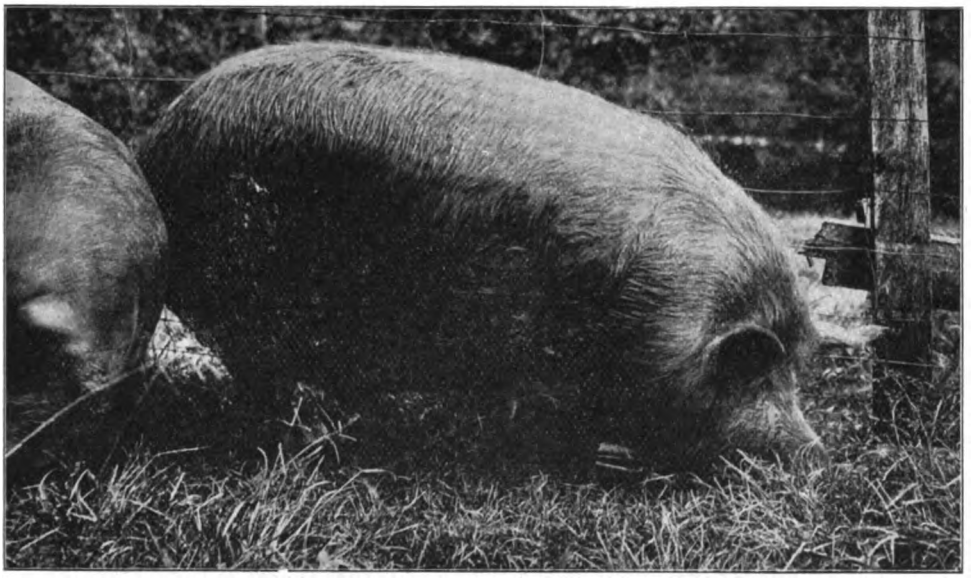
HOGS RAISED ON THE FARM.

An Expert Opinion.—A Northern expert recently reported, after examining the country in this State with a view to its value for cattle raising, as follows:

"Cattle are growing scarcer, grazing herds in the West getting more limited. As long as we had vast areas over which countless herds could wander and graze slowly, being driven and fattened from the home ranch to the railroad, so long we had beef in abundance and at a low price. The consumption of beef is growing, the population is increasing, the export is getting larger each year, and the source of supply is smaller than ever. The Western packers are fighting for existence. The Eastern packers are giving up gradually. They are too far from the source of supply. The Chicago packers were compelled to go to Omaha and even further West so that they could get every available herd of cattle as near the ranch as possible. It was cheaper to transport dressed beef from Chicago to New York than cattle on the hoof, but as much of the Eastern meat comes from a thousand miles further West, even this becomes almost a financial impossibility.

"If you can raise cattle successfully in South Carolina, in larger herds, and can control the grazing lands at a moderate price, you have a proposition better than a gold mine.

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A SIX-HUNDRED-POUND HOG.



ANOTHER VIEW OF THE CLEMSON HERD.

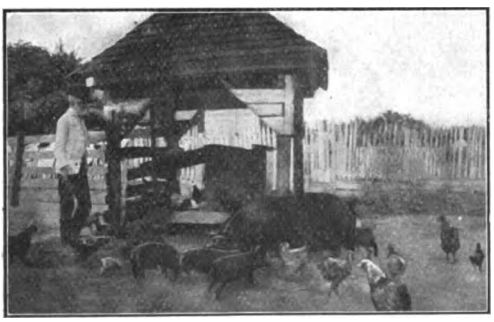
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"To come back to the Western ranchers; their own ranches in many instances are bare; insufficient to support herds in any size. The climatic conditions are partly at fault, and the gross methods of mismanagement are not to be overlooked. Northern cattle must be driven South four months in the year or freeze to death. Southwestern cattle must be driven North during the hot months or starve on the drought-driven Southern prairies. Thus cattle are scarcer and leaner, transportation is higher, and meat is dearer.



AN IMPORTED TYPE.

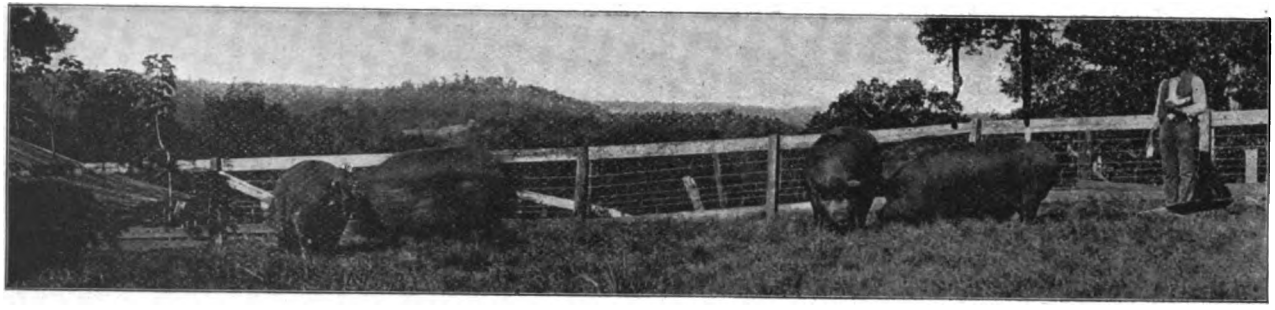
"Your ranch would be 800 to 1,000 miles from New York. You could bring your cattle as cheaply to New York as the Western ranchmen could get their live stock to Omaha. The advantage of freight is immense. The climate would enable you to ship all the year. Your cattle would not starve or freeze on the ranch or die on the road. Cattle shipped today would be in New York tomorrow.



BERKSHIRES.

"In your proposition it is not a question of sale. The demand is immediate. It is not a question of quality, for yours would be at least equal to, if not better than, Western cattle brought to the New York market. It is not a question of price. This is fixed—certain. Cattle in an Eastern slaughter-house are as good as gold in the United States mint. The profit-making feature of your enterprise, unless it is mismanaged and your cattle forced to graze on roots and rocks, is certain."

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SOME VALUABLE HOGS.



HOG-KILLING TIME.

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Live Stock and Products.

	Number.			Value.		
	1906.	1905.	1900.	1906.	1905.	1900.
Value of all live stock	.....	.....	.....	$28,078,906	$26,765,732	$20,199,859
Cattle	218,502	216,339	.....	2,619,840	2,445,708	1,792,991
Horses	83,026	82,204	78,419	10,437,182	9,504,033	4,848,903
Mules	134,690	124,713	117,369	20,598,121	16,630,500	8,415,523
Milch Cows	136,911	131,645	.....	3,833,508	3,804,540	2,541,723
Asses	.....	.....	195	.....	.....	19,021
Sheep	60,034	60,034	71,538	138,439	155,488	111,770
Goats	.....	.....	26,576	.....	.....	24,450
Swine	678,205	664,907	618,995	3,797,948	3,590,498	1,411,516
*Chickens	.....	.....	2,664,784	.....	.....	.....
Turkeys	.....	.....	120,140	.....	.....	.....
Geese	.....	.....	83,543	.....	1,000,000	889,953
Ducks	.....	.....	39,852	.....	.....	.....
All poultry	.....	.....	.....	.....	.....	889,953
All poultry raised	.....	.....	.....	.....	.....	1,539,755
Eggs, doz	.....	.....	9,007,700	.....	1,001,215	925,966
Bees, swarms	.....	.....	93,958	.....	149,215	142,977
Honey, lbs	.....	.....	872,590	.....	.....	.....
Wax, lbs	.....	.....	37,500	.....	.....	.....
Honey and wax	.....	.....	.....	.....	.....	92,857
Wool, lbs	200,000	200,000	175,290	.....	.....	.....
Cream, gals	.....	.....	4,796	.....	.....	4,657
Milk, gals	.....	.....	44,031,528	.....	.....	141,737
Cheese, lbs	.....	.....	1,081	.....	.....	50
Butter, lbs	.....	.....	8,150,437	.....	.....	195,939
Total dairy products	.....	.....	.....	.....	.....	3,232,725

*Including Guinea Fowl.

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3

Dairying

	Milch Cows.		
	Number.	Av'ge Price Per Head January 1.	Farm Value.
1906	136,911	$28.00	$3,833,508
1905	131,645	28.90	3,804,540
1904	109,704	24.64	2,703,107
1903	110,812	24.48	2,712,678
1902	109,715	22.92	2,514,668
1880	139,881	.....	.....

Dairying is one of the industries that has in the last two years made marked headway in South Carolina, as may be gathered from the illustrations furnished herewith, which are made from actual photographs on the farm. The United States Government has made special efforts to push this industry in the South, and this work has been in charge of a South Carolinian, Prof. Rawl, a graduate of Clemson College. In the Year Book of 1906, United States Department of Agriculture, Prof. Rawl speaks in this way of the industry in South Carolina:

"In South Carolina the dairy industry is, on the whole, developed to a very limited extent, although the northern section of the State is especially suited to this industry. The dairies of this section are, in the main, using very inferior stock; their buildings and equipment are frequently very inadequate, and they have no system of marketing their product. In several places, however, the dairies were found to be profitable, the animals in good health, and such dairy farms are distinguished from others of the community by their generally improved condition.

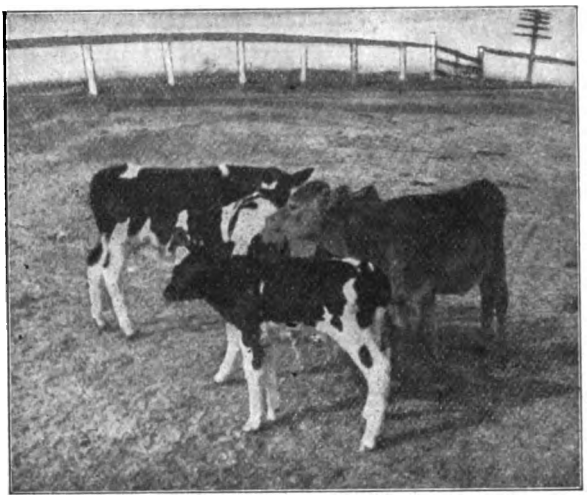


A NEAT DAIRY HOUSE.

"With but two exceptions, none of the dairy farmers were using silage, and only a few of them are feeding liberally enough on green feed. That part of the State, with its especially fine climate, good lands, and abundance of cool water, will, with a proper development, eventually become a dairy section.

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"The southern portion of South Carolina is usually low and in many parts very productive. Forage crops can be grown in great variety and cheaply, but the dairymen are for the most part confined to the towns and cities and rely principally upon commercial foodstuffs. The cows are, as a rule, inferior to those in the northern part of the State, and while there is an abundant water supply, frequently artesian, the temperature is, on an average, much higher than in the northern portion of the State. The principal menace to the industry in the southern part of this State may be said to be the existence of the cattle tick."



DAY-AND-A-HALF-OLD HOLSTEIN AND JERSEY CALVES.

For the absolute eradication of the cattle tick the State Department of Agriculture and many wide-awake farmers are now most earnestly laboring, and coöperation will possibly obtain the desired result.

The Year Book of 1906 of the United States Department of Agriculture, in further speaking of dairying in the South as a whole, says:

"In reference to the conditions that exist in the South as a whole, attention should be called to the following facts: In some cases herds are found producing as good results as are ordinarily made in any section of America. At other places dairy products are made as cheaply as in any of the dairy sections. Altogether there is an enormous demand in the South for dairy products; almost all of the butter and cheese is imported, some cream is shipped in from States a great distance away, and a great deal of condensed milk is used as a substitute for milk because of the scarcity and the poor quality of the fresh milk put on the market. Silage is used to a very limited extent, but in a number of the different sections, on the coast of Florida especially, the silage is of good quality. Probably the greatest reduction in profits is usually caused by the use of inferior cattle, which are found in a large majority of the dairies throughout the entire South.



DAIRY BARN.

"On the cotton farm cotton is usually the all-absorbing crop, and little attention is given to feed crops. In many cases no more animals are kept upon the farm than are actually necessary to cultivate the cotton crop, and often there is not enough feed raised to supply even these. This system is, of course, exactly the reverse of dairy farming, in which the feed crops are converted into more easily marketable and more profitable products, and practically all the fertilizing ingredients of the feed (the manure) are returned to the soil, which continues to increase in productiveness.

"The labor is often irresponsible and this discourages many from going into dairying, even though they appreciate its advantages. The warm summers and the disorganized condition of the dairy markets have also been discouraging. However, with the use of artificial ice, which is cheap, improved transportation facilities, and the mild winters, the thinking man is about convinced that the seasons are not unfavorable to the dairy industry.

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DAIRY BARN, DAIRY HOUSE, AND HOLSTEIN COWS.



MODERN DAIRY HERD GRAZING ON BERMUDA GRASS.

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"The demand for dairy products in the South has become enormous, and inasmuch as the markets have not usually been supplied with fresh products, the trade does not demand absolutely first-class articles, although the prices are comparatively very high.

"With the highly improved Southern farms, the question of cheap feed is settled, for there is probably no section of America that can produce cheaper feed. Especially is the great variety of legumes that thrive in the South worthy of notice, and these crops, with cotton seed meal, settle the question of protein.

"While very little attention has been given to the development of the Southern pastures, it is demonstrated on farms throughout the South that an unexcelled pasture can be maintained for at least eight months in the year.

"The old Southern plantation with its haphazard system is being gradually transformed into a well-organized and diversified farm, and in the transformation dairying promises to be one of the most potent factors. It will occupy a portion of the cotton farms, and even if it is conducted in such a way that the dairy itself is not profitable, it will make the farm fertile and therefore profitable in other lines.



THE CLEMSON DAIRY HERD.

"While the Southern dairyman, therefore, will have some difficulties that are not found in the northern sections of the country, he also has many advantages over the Northern dairyman in the milder climate, cheaper cost of buildings, the greater variety of forage crops, and good markets. The South will always be a great cotton country, but it will some day be also a great dairy country."

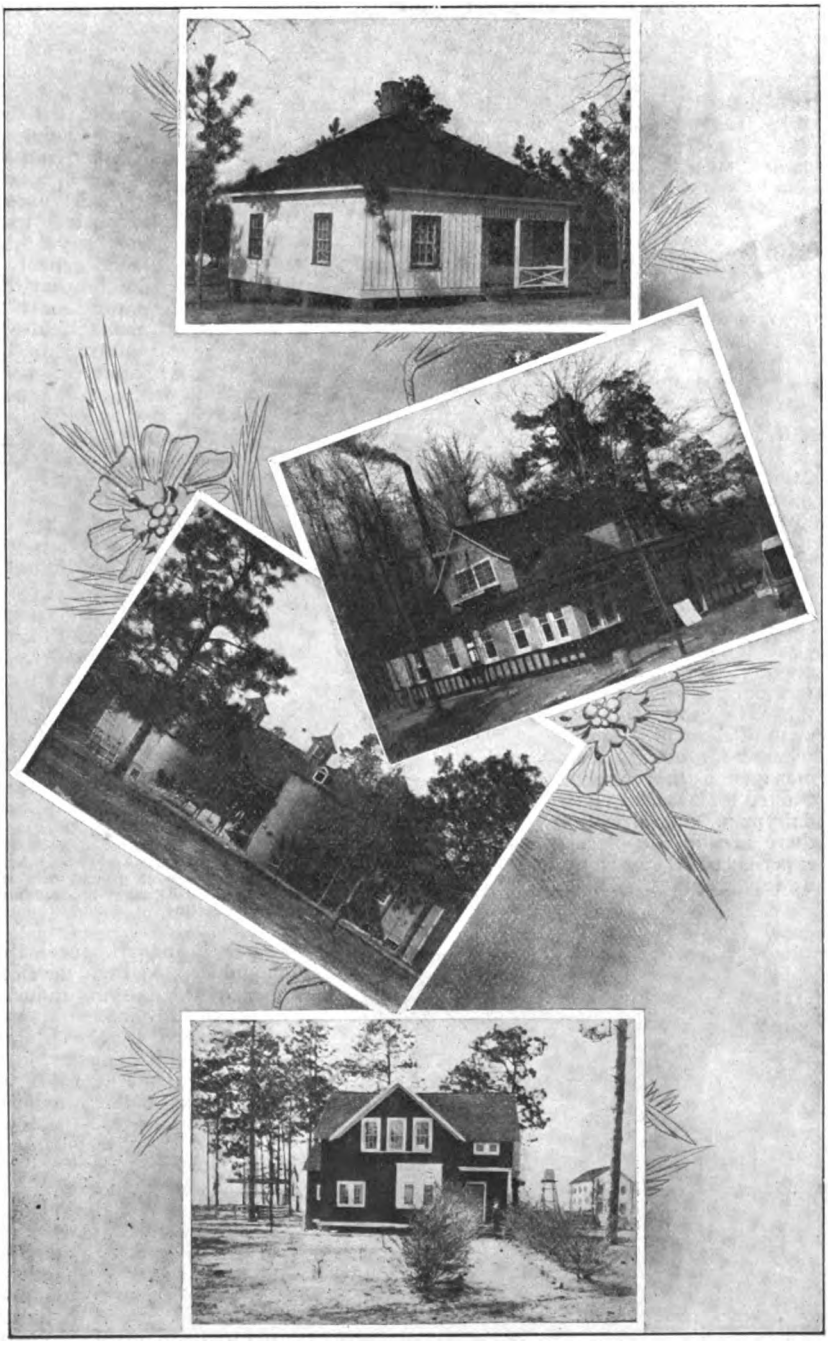
What the Federal experts say of the general Southern situation is preëminently true of South Carolina. There are rare opportunities in this State for dairying. Bermuda grass meadows grow luxuriantly, and no better grazing can be found for the dairy cow.

It has been only a few years ago that the Department of Agriculture assisted a Pittsburg, Pa., man in obtaining a good farm at a cheap price, suitable for dairying, near Aiken. He has developed this place wonderfully, as a page of illustrations show, and no amount of money could now purchase the place. The several hundred head of cattle are handled each day by German dairy people brought to South Carolina for the purpose.

Even now dairymen from elsewhere are here contemplating the establishment of dairy depots in the principal cities after the Eastern and English systems, and the local market demands warrant such enterprise.

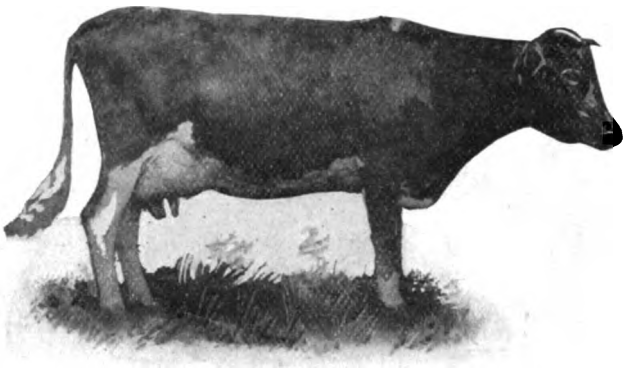
Local dairymen are beginning to realize the necessity for taking advantage of their opportunity, and many of them have greatly improved their methods and

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SCENES FROM THE PLACE OF A PITTSBURG MAN WHO BOUGHT 1,300 ACRES OF LAND IN AIKEN COUNTY A FEW DAYS AGO. 1, TYPE OF LABORERS' HOUSES; 2, THE DAIRY HOUSE; 3, THE DAIRY BARN; 4, THE OVERSEER'S RESIDENCE.

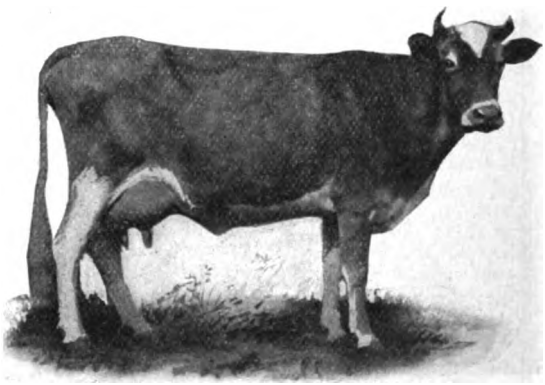
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EXCELLENT TYPE OF DAIRY COW.

plants. They are keeping good stock, taking good care in the preparation of the milk and butter that they are sending to market, and are step by step, though unconsciously, leading to a high development of an industry that means much to the agricultural industry of the State.

Recently an earnest and progressive South Carolinian has determined, and arranged for under the direction of the Federal Government, to erect and operate what he proposes to make the most modern of all dairy barns in the United States, and to operate the most perfect dairy in the country. The State Department of Agriculture has secured for him as his manager a thoroughly trained Massachusetts dairyman, and already there are on the place experienced Belgian dairy families. This



FANCY'S JEWEL—A. G. C. C., NO. 11084,
Tested for seven days and made twenty-one pounds of well worked, unsalted butter on a daily ration of three quarts of wheat bran, one quart of cotton seed meal, three quarts of ground oats and grass. Property of John G. Mobley, LaGrange Stock Farm, Winnsboro, South Carolina.



A HOLSTEIN DAIRY COW.

experiment, if successful, should lead to a rapid development of the dairying industry in South Carolina.

In regard to the present status of this industry, it is regretted that there are no statistics as to the amount of butter brought into the State annually; the "importations" come from many sources and through many channels. The Columbia distributing plant of the Armours sells in Columbia annually 28,000 pounds of butter at from 25 to 30 cents a pound and about 5,000 pounds of cheese. This concern has another plant at Charleston and several at border points. This gives a fair basis upon which to calculate the sales of Swift, Cudahy, and others. The eleven cheese factories we now have make an excellent product, but every now and then they have serious troubles that would be trifles to experts. These experiences of the pioneers deter others from going into cheese manufacturing.

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A GUERNSEY DAIRY BULL.

On January 1, 1905, South Carolina had only 109,704 milch cows on her farms, these cows being worth $2,703,107. On June 1, 1900, on 154,913 farms, there were 122,857 cows, and 81,041 reported dairy cows upon them. At the same time we had in all South Carolina only 442 dairy farms, owning 3,827 dairy cows. Of course, there are more now, but the increase has not been a noteworthy one.

In 1899 the total value of all the dairy products in South Carolina (on all farms) was $3,232,725, of which $2,890,342 was consumed on the farms. The butter production was only 8,150,437 pounds, of which only 1,103,637 pounds were sold; out of the 44,031,528 gallons of milk only 1,186,045 gallons were sold; 1,081 pounds of cheese were produced and only 800 pounds sold.



THE TYPICAL DAIRY COW.

The present condition of this industry in South Carolina is amply shown by the accompanying tables. Its possibilities are unlimited. With South Carolina's capacity for the production of forage crops in nine months of the year, the chances for financial success are likewise not to be measured at a glance. It only remains for the wide-awake dairyman to take advantage of opportunities open to him.

At the South Carolina Experiment Station in 1906 ten cows were fed a ration consisting exclusively of cotton seed meal and a good quality of corn silage for a period of over five months with very satisfactory results. The cows yielded more milk and butter fat than during any corresponding period in previous years. No bad effects were observed even when the meal and silage were fed



PRIZE JERSEY BULL AND HOLSTEIN COWS.

separately. It is, therefore, believed that cotton seed meal to the extent of five to six pounds per cow daily and well-matured corn silage constitute an excellent ration for milch cows. The good results obtained in feeding cotton seed meal and silage are attributed in a large measure to the fact that the silage was made from well-matured, well-eared corn.

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CHEESE FACTORY IN NEWBERRY.

4—CHEESEMAKING

Cheesemaking in South Carolina has been, up to a few years ago, a practically unknown industry, but since 1902 marked headway has been made in this branch of agriculture. It is noteworthy that, though the industry is so young, there are already eleven small cheese factories in operation in different portions of the State, and there is every promise of a most rapid and substantial growth of the industry. The milk of Bermuda-grass-grazed cattle has been found specially adapted to cheesemaking, and the quality of the cheese put forth is pronounced by many to be very much the same as the Swiss cheeses. The State Department of Agriculture has aided and stimulated the development of this industry in every way possible, and at this time these efforts are being supplemented by efforts of the United States Government.

In the last (1906) Year Book of the United States Department of Agriculture appears the following bearing upon this industry and the Federal Government's share in its development:

"The South presents many problems in dairying peculiar to that section. At present the South is supplied with dairy products almost entirely from Northern States. Condensed milk, cream, and butter, and practically all the cheese consumed, are from the North, while the Southern farmer devotes practically his whole attention to raising cotton. This cultivation of cotton upon the same fields year after year rapidly exhausts the soil, which must be restored by the use of commercial fertilizers at high prices. The great need of all this section is live stock; and dairy cattle should be among the first live stock introduced. The South can produce greater quantities of feed at less cost than any other section of our country, but the lack of knowledge regarding the handling, care and feeding of dairy stock and the kinds of crops to grow is the great drawback and one with which the Dairy Division should be in a position to cope, both by sending its own men directly to the farms and by coöperation with the State experiment stations and State dairy organizations.

"To study these questions, B. H. Rawl, dairyman at the Clemson Agricultural College, South Carolina, has been appointed as an expert. His work thus far has been to travel from point to point, studying the field and lending what encouragement he can to those who desire to go into dairying. Mr. Rawl has met with an enthusiastic reception, and he should be given several assistants, as hundreds of farmers have already shown themselves anxious for information and guidance. At Easley, S. C., a number of men have organized a cheese factory, and through the efforts of Mr. Rawl have been induced to build silos. Great interest is taken in the work by other dairymen in the South, many having indicated a desire to go to Easley and learn the methods, and it is expected to make this an objective center for dairy information. The establishment of other similar points for the diffusion of information in all the States would undoubtedly be attended with good results."

For the starting of this industry in South Carolina much credit is due C. G. Voight, a native of Illinois, who came here in 1902 to make his home in South Carolina. In that year he organized a cheese factory in Easley in Pickens County. The company was known as the Easley Creamery Company. The factory used 300 gallons of milk per day. The first milk was received on May 27,

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1902, and the following day the first butter and cheese were made. These proved to be of a particularly good quality and found a ready market at good prices. The principal difficulty with the pioneer factory was that the persons furnishing the milk lived too far from the factory. This factory, however, led to the establishment very soon of two other factories, the second being known as the George Creek Cheese Company, and the plant being located within three and a half miles of Easley. Fine cream cheese was made and it found a ready market at fifteen cents per pound. In 1903 the Brush Creek Cheese Company was formed. The milk of about fifty cows was used from the start in this plant, and the cheese found a ready market at from fifteen to sixteen cents per pound. The patrons of the factory were well pleased, and the people of the surrounding country are now preparing to build silos and large and modern barns. Another factory that has proven successful is that of S. P. Crotwell at Newberry. The other factories in the State are the 30-gallon variety; they are scattered over several counties. The Union Creamery Company, at Union, for a year or two made excellent cheese, but this plant is no longer operated. The product of these initial—indeed, experimental—factories has commanded a higher price uniformly on local markets than the best Western-made cream cheeses.

The Department of Agriculture has been making efforts to get started cheese factories making the product from goats' and sheep's milk, giving the finest varieties of cheese, and at this moment negotiations are pending for a tract of 50,000 acres of land in the Piedmont country, with a view to its utilization for the raising of sheep and goats for this purpose by people from Europe who are experts in the making of high-grade cheeses. The climatic and other conditions have been found, upon examination by an expert, to be satisfactory in every way.

The possibilities for the development of this industry are unlimited.

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POULTRY RAISING IN A PEACH ORCHARD.

5—POULTRY



THERE is no industry in South Carolina that is developing more rapidly than that of poultry raising for high-class fowls, market purposes and egg production. Up to a very few years ago for the latter purposes not much headway had been made, though the reputation of stock raised by such pioneers as R. B. Watson in Saluda, Connelly in Charleston, Gaines in Cherokee, Addy in Lexington, Cullum in Saluda, and Holzhauser, Bollinger and Kendall in Richland, has been for years recognized and captured prizes in the great poultry exhibitions of the United States. Today there are poultry yards all over South Carolina raising the fancy varieties of fowls and finding ready markets, and it is wellnigh impossible to go to any portion of the State where numerous new poultry yards, operated solely for the raising of market fowls and for the purpose of shipping eggs to market, cannot be seen already established or in process of establishment. This has come about largely from the increased demand in the principal American markets for the



A GERMAN POULTRYMAN'S WHITE WYANDOTTES.

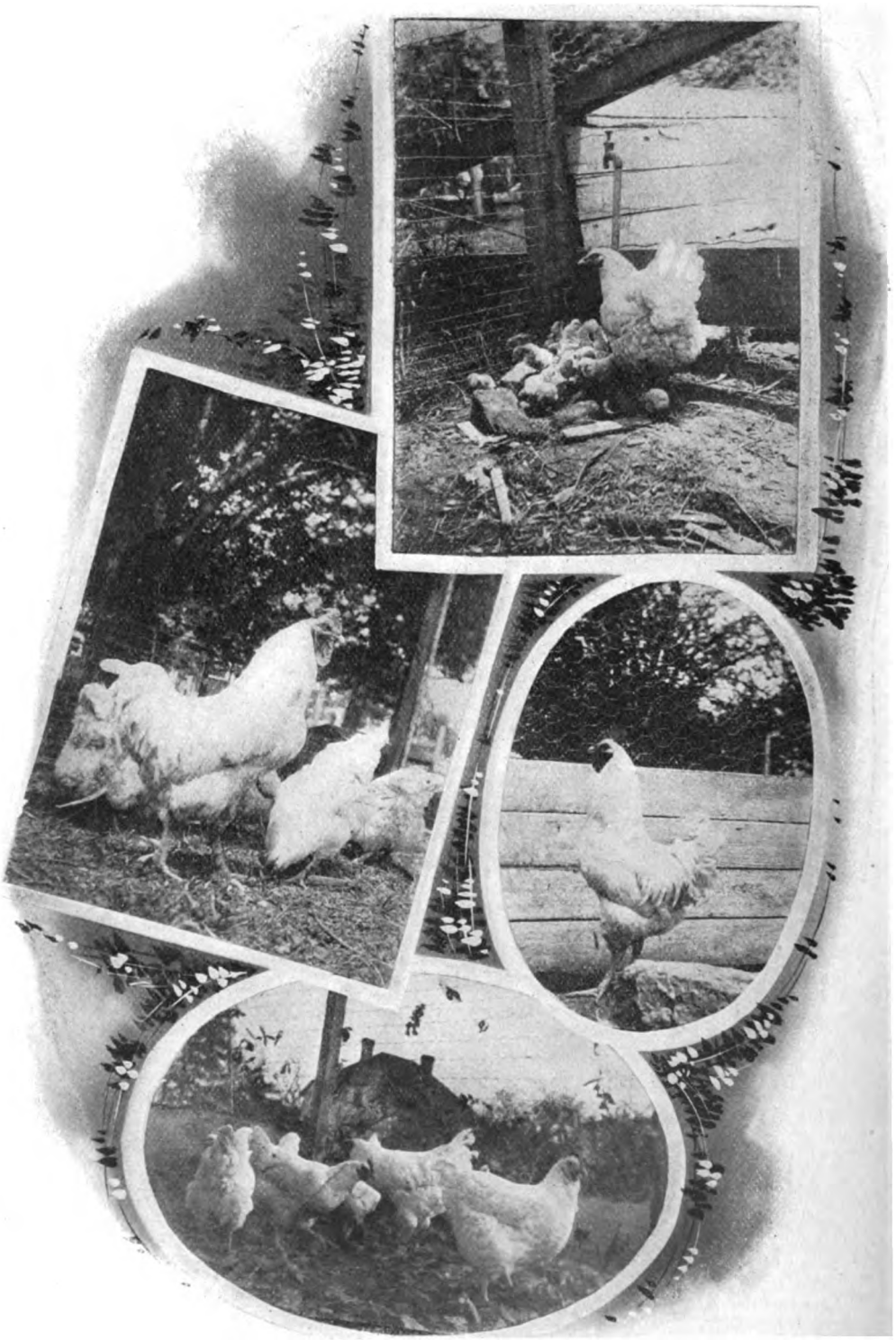
product of the hen, from the introduction of rapid and safe means of transportation to these markets, and from the gradual introduction in this primarily cotton-growing State of diversification in farming operations. Suburban life has likewise stimulated the industry. There is a noteworthy market-shipping enterprise of this kind in one of the coast counties; it is operated by Eastern men who came to this State recently, and they are meeting with marked success, shipping all their product to a city in another State. There are also a number of poultry raisers who have come from other countries and have begun operations—all looking to market purposes, both neighborhood and distant. Notable illus-

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SCENES AT GAINES' POULTRY YARDS AT GAFFNEY.

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WHITE PLYMOUTH ROCKS AT GAFFNEY.

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trations are given herewith, and they bespeak better than words the healthy development of this industry upon all the lines indicated.

1900.	Number.	Value.
Chickens	2,664,784	.....
Turkeys	120,140	.....
Geese	83,543	.....
Ducks	39,852	.....
All poultry	.....	$ 889,953
All poultry raised	.....	1,539,755
Eggs	9,007,700	925,966
Eggs	.....	*1,001,215

*1905.

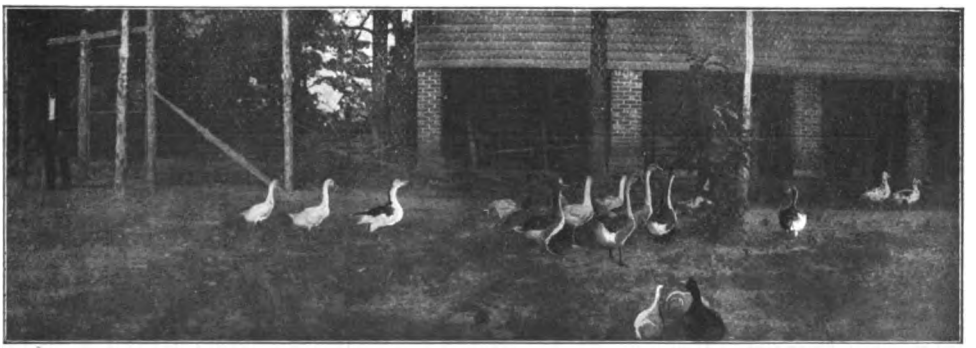
The soil and climate of South Carolina are particularly well adapted for poultrying, and the industry is not infrequently combined with fruit raising for market purposes, as is shown in several of the illustrations herewith.

Generally in the State Wyandottes, Leghorns and Plymouth Rocks among poultry are most popular, though many of other varieties are raised. The raising of turkeys, geese and ducks for market purposes is as yet not widespread.



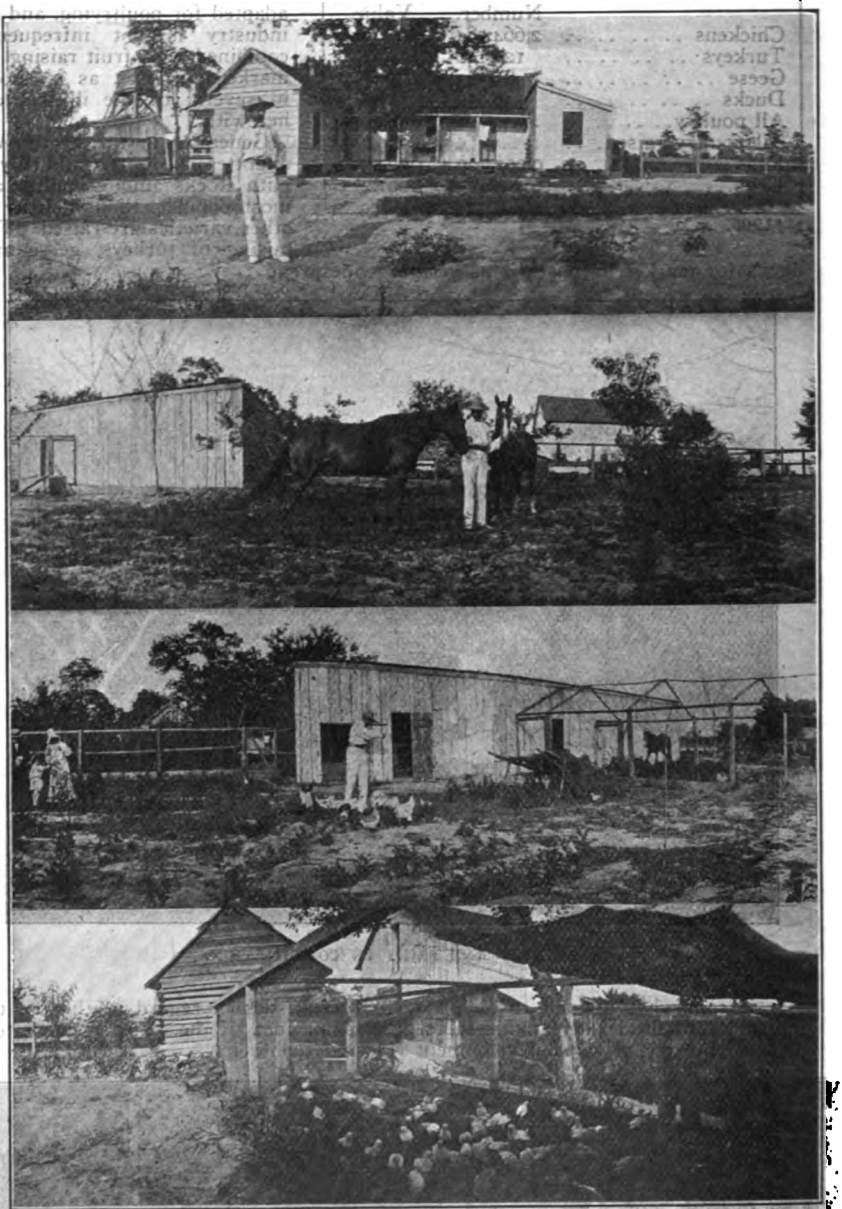
POULTRY AND FRUIT IN COMBINATION.

It is somewhat difficult to obtain accurate statistics in regard to the poultry industry, but the accompanying table gives some idea of the status immediately prior to the recent rapid development referred to herein.



GEESE.

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SCENES FROM THE MARKET POULTRY FARM OF A GERMAN SETTLER.

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A HERD OF ANGORA GOATS.

6

Angora Goats and Sheep

South Carolina has been doing practically nothing with an industry that Secretary of Agriculture Wilson says is ideal for the Piedmont country. Aside from Watts at Laurens and Kinard at Ninety-Six, but few have been engaging in the sheep and goat raising industry. These men have been pioneers. When the Department of Agriculture was established a few years ago one of its first efforts was to introduce the raising of Angora goats. There was properly a general belief that these animals would not thrive and develop on an elevation of less than 1,500 feet, and the effort was first made to get the industry started in Oconee or Pickens Counties. This failed. In the meantime it was determined to make an effort on flat or rolling lands in the lower portion of the State, and about 200 Angora goats were placed on land owned by a Pittsburg, Pa., man in Aiken County. That they have succeeded and exploded the elevation theory goes without saying when the illustrations herewith are noted. There has been only a very small percentage of deaths, and the experiment has proven a success from every standpoint. Later on a herd was started on James Island and another on the coast lands between Branchville and Charleston. Both have proven marked successes.

SHEEP.

	No.	Average value Jan. 1.	Farm Value.
1906	60,034	$2.31	$138,439
1905	60,034	2.59	155,488
1904	58,857	2.05	120,374
1903	59,452	1.97	117,311
1902	61,291	2.02	123,752
1880	118,889	.....	.....

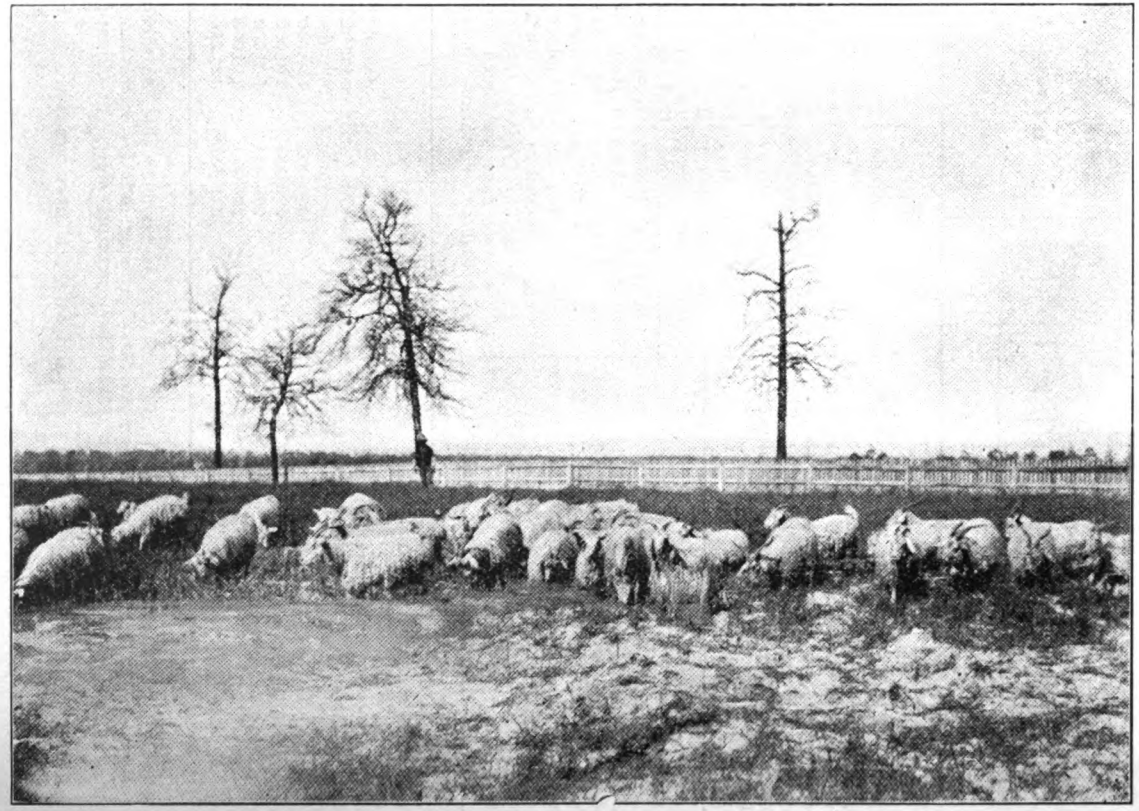
WOOL PRODUCTION.

	Avg. wt. of fleece, pounds.	Wool washed and unwash'd, pounds.	Wool scoured, pounds.
1906	4.	200,000	116,000
1905	4.	200,000	116,000
1904	4.	200,000	116,000
1903	4.	200,000	116,000
1902	4.25	212,500	123,250

At this time, there being no fence law in this State, and a superabundance of worthless dogs, actually exceeding in taxable value the sheep in the State, the sheep and goat raising and wool growing industry is far from being commensurate with the natural advantages therefor offered in climatic and other conditions.

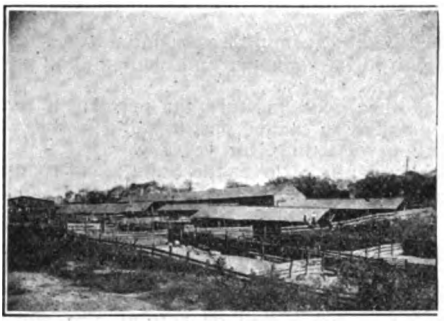
The South Carolina statistics as to sheep and wool are given herewith.

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A HERD OF ANGORA GOATS.

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STOCK YARDS.

7

General

Whatever might be said or written of the live stock industry would be incomplete without considering the subject from a purely business and commercial standpoint, in the light of the general suitability of soils and climate and the growing necessity for meat supplies, now bought from the Northwest almost entirely. It only requires a brief investigation by any one of the volume and money value of Western meat supplies brought in monthly to any county-seat in the State for one to come to a full realization of the amount of money the people of this State waste annually in freight charges and commissions included in the prices they pay for these products. In one leading county-seat these importations ran up to over $100,000 a month in value for product raised in a Western State, where the original cost of production alone is much higher than in South Carolina. In what is said below most of the essential facts were gathered by G. E. Nesom, formerly with Clemson College, now in the Philippines doing pioneer governmental work, who made a careful study of all the conditions here.



SELLING SOUTH CAROLINA RAISED HORSES.

The Food Crops. — The thing which all well-informed stock men consider first of all requisites to success is the ability to grow on his farm all or most of the feed stuffs which will be required to feed his herd or flock. The domestic animals require grain and grass as the principal foods, and it only remains to show that these are or can be grown in South Carolina. It is not necessary here to discuss cotton seed meal and hulls, the most common and widely used cattle foods in this State. For the purposes of this article cotton seed meal is grain and cotton seed hulls is grass. Pasture, meadow and corn field are of far greater concern to the real stock raiser than any commercial feed stuffs.

If grains and grasses are in the hands of men who know how to manage them and are planted on good soils, where there is plenty of rainfall and an abundance of sunshine, there will always be an abundant harvest.

Bermuda is "the blue grass of the South," and must be considered the standard grass for meadow and pasture in South Carolina. It flourishes in all parts of the State, never requires replanting, forms a pasture of the finest quality from April to November, and it is the best binder in the world for clay soils that tend to wash and sandy lands that would otherwise be cut by the hoofs of the animals. Bermuda withstands drought better than any other grass in the South. It is propagated by planting small pieces of sod twelve inches apart in rows two feet wide, covering with plough and harrowing. It spreads by underground and overground stems, which take root at each joint, and will cover the ground the first year, during which pasturing helps rather than injuring it. It yields from two to four tons of the best quality of hay on good clay or bottom land.

Orchard grass and red clover forms an excellent mixture for pasture and hay and makes a splendid growth on clay and bottom lands. It furnishes very excel-

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lent pasture from February till June, thereby forming a valuable adjunct to Bermuda. Then it makes a second growth in late summer and made a good pasture until the middle of December last year.

Blue grass and white clover is another good mixture for permanent pasture on clay and bottom lands, especially suited to shaded pastures and lawns, where it grows with increasing vigor, without reseeding, for years.

Lespedeza, or wild clover, grows abundantly all over the State along roadsides, in uncultivated fields, meadows and forests, furnishes splendid summer and fall pastures, or will yield a good crop of hay. Being a true clover, it rapidly improves worn-out soils.

Alfalfa has never been grown extensively here, but has been tested sufficiently to show that it neither requires rich prairie nor heavy lime soils for its success. Those who have seen it growing at Biltmore and in the Charleston Exposition grounds at Charleston will admit that it grows well on bottom, clay and very sandy lands.

Among the forage crops which may be considered more distinctly hay producers than those above named may be mentioned the cowpea, a cultivated annual now extensively planted on stubble land and with corn and cotton as a soil improver. It is generally accompanied by intimate mixture of crabgrass and watergrass, and when cut makes a heavy yield of hay equal to clover in feeding value. Some trouble is encountered in curing it where the growth is very rank, unless a tedder is used. A practice which is gaining ground is to allow it to wilt and finish the curing by allowing it to heat in cocks or windrows.

Johnson grass has put some cotton planters out of business, as it is a rank-growing, hardy grass that reaches perfection in fields which are poorly cultivated by colored tenants. It makes an excellent meadow on moist land and gives a heavy yield of good hay if cut before it heads out. If cut later, it is coarse and woody. Some very fine Johnson grass meadows can be seen along the Broad and the Congaree Rivers near Columbia and on the Savannah below Augusta.

Sorghum makes a splendid hay if sown broadcast, with or without cowpeas, and cut as it begins to head.

Corn stover, shredded corn and stripped fodder are extensively used all over the State. In this connection it should be remembered that corn was originally a tropical plant, and in a climate like this grows ten to fifteen feet high, thereby producing a large yield of fodder as well as a good crop of grain.

Among the soiling crops, corn stands first as a fresh green food and for making ensilage, to be used in winter. Some of the best soiling and grazing crops for winter are rye, barley, wheat, turf oats, hairy vetch, crimson clover, burr clover and rape. Vetch is generally sown with oats in the fall or on Bermuda sod. Burr clover is sown in cultivated land when the crop is laid by, makes a fine growth from midwinter to spring, and reseeds itself in April and May, after which a crop of corn or cotton may be grown on the same land without interfering with the succeeding crop of clover. Crimson clover yielded 20,000 pounds of green feed to the acre in March and April in 1903 at the South Carolina Experiment Station. The editor of the Chicago *Live Stock World* saw it growing the first week in March, and after expressing much surprise at seeing such a crop at that season of the year, laconically remarked that "If Illinois stockmen could have a crop like that at this season of the year they would be literally 'in clover.'" It also made a fine grazing crop for hogs when sown in the fall with rape.

Wheat, oats, rye and barley make excellent yields of hay when cut in the dough stage, and, of course, are extensively grown to maturity for the grain they produce.

The sweet potato stands at the head of all root crops in this State and grows to perfection in the sandy lands of the low-country, where it yields from 200 to 400 bushels to the acre. When stored for winter use the starch in them gradually turns to sugar, thus increasing their feeding value, which is at all times superior to turnips, rutabagas or sugar beets. If combined with peanuts and chufas, so that hogs may be turned on succeeding sections of the field in the fall of the year, a choice quality of pork can be produced at a minimum cost.

The commercial food stuffs to be had in any town of the State include all of the grains, mixed feeds and hay, but those that are produced here and form the bulk used are cotton seed meal, cotton seed hulls, wheat bran and rice meal. Nearly every town of any importance has a cotton oil mill, so that feeders in that vicinity can procure meal and hulls at the factory and haul directly to their barns. Cotton seed meal stands at the very top of the nitrogenous grain foods produced in America, and while it sells usually for less than wheat bran, when fed, and the resulting manure placed on the farm lands, it has a value almost twice as great. This results from the fact that it has a fertilizing value as great

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as its feeding value, and three-fourths of the fertilizing value can be recovered in the manure if properly saved and applied to the farm. Cotton seed hulls is a bulky by-product of the oil mills and forms the principal "roughness" used in feeding cattle. It is a cheap and fairly satisfactory substitute for hay. The output of wheat bran and rice meal is limited, but the latter is very similar to corn meal in composition and feeding value. It displaces a great deal of corn products, especially in feeding cattle, hogs and sheep.

Health of Animals.—With an array of feeding stuffs like this, all grown at home, and a climate that is unexcelled, no well-posted stockman would for a moment doubt the ability of South Carolina to become a great producer of live stock and animal products. But there is another important consideration that must not be overlooked, and that is the health of the animals. If deadly diseases lurk in wait to pounce upon herd and flocks and decimate their numbers, success can never be attained. The great enemy of horse flesh is glanders, of cattle tuberculosis, and of hog cholera. A few cases of glanders and cholera are found from time to time, but tuberculosis has never been diagnosed in but one herd of cattle in the State, while anthrax and blackleg are unknown. Formerly Texas fever caused some losses, especially to Northern cattle brought to this State, but fortunately the cattle tick, which is responsible for the spread of the disease, is disappearing, and thanks to veterinary science, we now have a successful and practical means of inoculating cattle against the disease. Nearly all native cattle in the State are immune to the disease and Northern cattle inoculated on arrival here are in a few days beyond the power of the ticks to do them any harm. Calves from either native or Northern cows easily acquire immunity when very young if exposed to ticks in pasture and never afterwards suffer any difficulty. It is the adult "tenderfoot" cow from the North that Texas fever handles so roughly.

Lines of Inducement.—South Carolina is preëminently an agricultural State, whose farmers are engaged in growing clean, cultivated crops, with the live stock business as a side issue. Now that the population has passed the million and a half mark, and factories so multiplied that she stands second in the Union in the manufacture of cotton goods, the demands for all classes of animals and animal products far exceeds the home supply. The people are forced to turn to the West for horses, mules, dressed meats, lard, cheese and butter, and pay the prices that naturally accompanies such long shipments. Several years ago this condition dawned upon the people and now they realize the loss to home industries and the absolute need of regaining the ground that has been lost. The money that has flowed so freely westward must be kept at home to reward those whose insight and industry enables them to supply the people with what they want and must have.

After what has been said about the needs and advantages for the live stock business in this State, it only remains to point out the lines in which greatest inducements are offered. The average American is a business man, and when he sees clearly that there is a demand he is generally ready to put that article on the market. If the people of the State do not take advantage of the opportunitis offered, it is to be hoped that others will.

Along the line of horses there is a steady demand for good roadsters and combination horses. One or two good horse farms in every county could sell every animal they could raise and then not supply the demand. Draft horses sell poorly, the sales being mainly what are classed in the Western markets as "Southerners," a class of culls that go mostly to cotton plantations to be worked by negro tenants. The greatest demand is for mules, the only recognized draft animal in the South. They have been very high the past few years, good ones going at $150 to $225 each, and any kind of a mule that is salable will bring $100. Not only do we need mule farms, but every community should have a good jack and every farmer a brood mare that he could use for raising mules.

Milk cows for family and dairy purposes are always in strong demand, Jerseys taking the lead. Grades with first calf bring from $30 to $50, while well-bred cows sell readily at from $50 to $100 and higher. There is also a good market in the towns and cities and about the cotton factories for milk and butter. If the dairy cattle of the State were not so widely scattered in the rural districts, no doubt the demands could be met, but many men who own good dairy herds never market a gallon of milk nor a pound of butter. Cheesemaking was until recently unknown here, but there are good prospects at no distant date. The man who runs the pioneer factory says that this section and climate offer the very best of advantages for the manufacture of cheese. He not only cites the advantages enumerated earlier in this article, but says that 100 pounds of milk here makes two pounds more cheese, which sells for four cents a pound more than in the North. The demand for his products are so great that he is com-

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pelled to sell everything in his curing room that has been there as long as a week. It is no surprise, then, that he can pay $1.20 per hundred pounds for milk, and that each cow used in supplying this factory yields her owner $7 to $10 per month.

There is a very active demand for young breeding cattle of the beef type, and the man who can supply them has a harvest awaiting him. Bulls suitable for use in grading up are in greatest demand, but most buyers want one or more registered cows. Shorthorns, Red Polls, Herefords, Devons and Aberdeen-Angus are wanted in the order named.

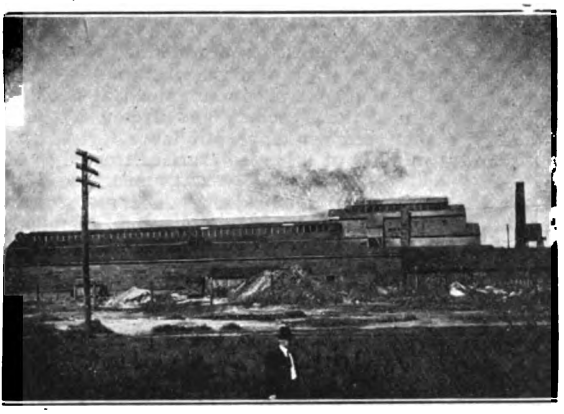
Feeders are always readily sold for fall and winter feeding. Many buy stockers for grazing purposes in spring and summer and finish them for the winter market. The feeding of beef cattle on cotton seed meal and hulls is now a prominent industry, as shown by the fact that last winter nearly a hundred carloads were fed between Columbia and Augusta. One lot of 334 head were fed on distillery slops in Columbia, and the owner, who is an experienced Kentucky feeder, says that they made as fine gains and finished as well as any cattle he has ever fed anywhere. They were shipped to Philadelphia, made almost a solid trainload and sold for about $16,000. Hundreds of carloads will be fed every year in the vicinity of the oil mills and on farms and as early as August feeders were clamouring for cattle in one to ten car lots. Here is the weakest point in our cattle industry. The local supply of feeders consists of grade Jersey steers and other surplus stock from dairy herds, and they can be had only in limited numbers. The result is that the cattle men have to go outside of the State for feeders and stockers. Beef breeding has received considerable attention from a number of men since 1900, but they have not yet had time to place on the market an adequate supply.

Home-bred hogs are all consumed locally, and the market supply comes largely from East Tennessee, while the bulk of meat and lard comes from Western packing houses. Brood sows and pigs in pairs and trios sell at sight. Berkshires, Essex and Poland Chinas have the lead in popularity.

Eggs sold during the past summer at 25 cents a dozen and chickens at 30 to 40 cents. Even at these figures they were hard to get. Here is a fine opportunity in a business that is both pleasant and profitable and easily within teh scope of the industrious housewife.

When the animal industry of the State has reached a point where there will be an adequate supply on the market, packing houses will come to this locality. Then cattle can be marketed at one-fourth the cost that is now required, and the question of quarantines will no longer affect the industry. With the reputation that American meats now have in the foreign countries, there is no danger of overproduction, and the business may be indefinitely expanded. With the opening of the port of Charleston there are excellent possibilities for the export of cattle on the hoof to Europe, nearly all of which business is done now by the West through the port of Boston.

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MANUFACTURING FERTILIZERS.

Chapter XI.

Manufactures

1

General

South Carolina has made a record as a manufacturing State that is little short of the wonderful, when the period in which this development has occurred is considered. Textile manufacturing is by far the most important of all the manufacturing industries of the State, the capital involved in 1907 lacking only ten million dollars of being as much as was invested in all manufacturing in 1905. South Carolina occupies the proud position of leading all the Southern States in cotton manufacturing, both in capital and in spindles, having nearly two and a quarter million dollars more capital than the second State, North Carolina. South Carolina also in this regard ranks second among all the States of the Union, Massachusetts alone outranking. This State ranks fourth in the United States in the manufacture of commercial fertilizers, and fifth in each of the canning and hosiery industries.

Lumber and timber products and planing mill products rank second in this State's manufacturing enterprises, and then come, in the order named, fertilizer manufacturing and the cotton seed oil and cake industry. Brick and tile manufacturing, the making of hosiery and knit goods and the manufacture of carriages and wagons play an important part in the manufacturing industry of the State. In the past few years there has been a marked tendency on the part of the people to pay more attention to the smaller and diversified manufacturing industries. There is at this time quite a development in progress in the matter of small factories, turning out useful articles heretofore purchased entirely from the North.

In the Last Two Years.—Since 1905 the increase in manufactures has been as marked as at any time in the State's remarkable manufacturing history, and there seems to be no evidence of a decline during 1908, as, notwithstanding the financial situation at the close of 1907, there are announced to be built and put in operation during 1908 no less than 18 new textile plants alone, 12 of them representing $2,746,000 capital and over 100,000 spindles, not to mention contemplated enlargements of existing mills. Water powers are in process of development all over the State, and the growth of manufacturing at this moment seems to be limited only by capital and the lack of labor. Over 77,000 persons are now actually employed in manufacturing plants, nearly 60,000 of these being in the textile plants; it is thus seen that approximately 150,000 persons are dependent on manufacturing for their livelihood.

Leading Industries.—In 1905 over one-half of the manufacturing establishments in the State were engaged in the seven leading industries—textiles, fertilizers, lumber and timber products, lumber and planing mill (finished) products, hosiery products, and cars and general shop construction and repairs by steam railroad and knit goods, cotton oil, seed and cake products, and cars and general shop construction and repairs by steam railroad companies; these establishments manufactured 86.9 per cent. of the value of all the products. Each of the seven industries showed increases for the principal items, with a general increase for the entire seven in every regard. For these seven industries the increases in value of products and wages were over 50 per cent., that in the number of employees was 28 per cent., and in cost of materials used and in capital, each, more than 75 per cent.

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New Industries.—Important among the new industries begun since 1900 is the manufacture of furniture. In 1905 there were six prosperous factories in operation, employing 140 wage-earners and turning out products valued at $202,163. Among other new industries may be named the bleachery and dyeing establishment, glass works, blanket factory, basket reed works, aseptic laboratories, press cloth works, cotton waste mill, and a number of other enterprises treated under "Special Manufacturing."

Corporate Ownership.—There has been a marked tendency since 1900 toward incorporated company rather than individual and firm ownership of plants. Incorporated companies now control 96.8 per cent. of the capital, give employment to 89.9 per cent. of the wage-earners and produce 91.9 per cent. of the value of output, while owning but 29.5 per cent. of the plants. Corporate ownership is most pronounced in the textile, cotton seed and fertilizer industries.

Individuals owned 48 per cent. of the total number of establishments in the State, furnished only 3.2 per cent. of the capital, employed 8.7 per cent. of the wage-earners, and reported but 7.3 per cent. of the total value of the products; whereas the incorporated companies, controlling but 33.2 per cent. of the establishments, furnished 95.2 per cent. of the capital, gave employment to 86.7 per cent. of the wage-earners, and manufactured 88.8 per cent. of the value of products. The manufacturing operations of firms and establishments of mis-



AN OLD WATER POWER GINNERY STILL SO OPERATED.

cellaneous form of ownership were relatively unimportant, the combined value of products forming less than 4 per cent. of the total for the State.

In Charleston, Greenville and Spartanburg individuals reported the largest number of the establishments, while in Columbia the largest number was returned by incorporated companies. In every city, as well as in the State as a whole, however, over 80 per cent. of the value of the products was reported by corporations.

Value of Products.—The average value of products for all the establishments in the State in 1905 was $56,738. There were 257 establishments with products valued at from $20,000 to $100,000, which renders it impracticable to determine whether the amount of their individual production was over or under this average; but of the remainder there were 978 establishments with products valued at less than this average and 164 with products of greater value. The establishments in the former class, although constituting 69.9 per cent. of the total number in the State, represented but 5.5 per cent. of the capital, gave employment to only 9.5 per cent. of the wage-earners, and manufactured products valued at only 7.1 per cent. of the total value of products; while the establishments with a value of products above the average, formed but 11.7 per cent. of the total number for the State, and yet furnished 81.9 per cent. of the capital, gave employment to 75.8 per cent. of the wage-earners, and reported 78.5 per cent. of the value of the entire output.

The bulk of manufacturing operations in the State was reported by establishments having a product valued at $100,000, but less than $1,000,000. However,

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this class included one establishment with products valued at more than $1,000,000, this combination being made in order to avoid disclosing individual operations. This class, consisting of 151 establishments, had nearly three-fifths of the total capital, gave employment to more than one-half of the total number of wage-earners, and reported over one-half of the entire value of products for the State.

Establishments reporting a product valued at $1,000,000 and over were shown for only two of the selected industries—cotton goods and lumber and timber products. In the former industry there were 13 such establishments; they employed 11,698 wage-earners and manufactured products valued at $17,817,606. In the lumber and timber industry there was but one such establishment, and consequently the statistics cannot be shown without disclosing individual operations.

Manufacturing in the Cities.—The 1905 condition of manufacturing in the four chief municipalities in South Carolina affords an interesting study. Charleston, the largest city in the State, reported products valued at $6,007,094 in 1905, as compared with $5,713,315 in 1900, the increase being $293,779, or 5.1 per cent.; while the average number of wage-earners increased 263, or 8.3 per cent., and the wages paid, $134,747, or 14.7 per cent. The principal industry in 1905 was the manufacture of fertilizers, and over 35 per cent. of the total value of the fertilizers produced in the State was reported for this city. The manufacture of cotton seed products showed the most notable gain.

Of the four cities, Columbia showed the largest actual increase in the value of products, which rose from $3,133,903 in 1900 to $4,676,944 in 1905, the gain being $1,543,041, or 49.2 per cent. Other increases were as follows: Capital, $865,454, or 22.3 per cent.; wage-earners, 302, or 14.4 per cent.; wages, $278,960, or 53.8 per cent.; and materials used, $793,529, or 42.9 per cent. Most of the industries located in the city showed increases, and several industries that were not shown at the census of 1900 were reported in 1905. Among those of chief importance may be mentioned the manufacture of distilled liquors and of glass.

Spartanburg and Greenville ranked next, in the order named, according to value of output, showing increases of 33.7 and 73.5 per cent., respectively, over the values of their products in 1900. In each of these cities the manufacture of cotton goods constituted the most important industry.

Wage-earners.—The largest average number of wage-earners employed in 1905 was in the month of March, and the smallest in the month of July, the variance being about 5,000.

Horse Power.—There was, as compared to 1900, an increase of 103 in the number of establishments reporting power in 1905, while the growth in horse power was 102,617, or 86.5 per cent. Steam power showed a gain of 76,519 horse power, or 94.6 per cent., and formed 71.2 per cent. of the total for all kinds in 1905, while electric power, owned and rented, increased from 6,061 horse power, or 5.1 per cent. of the total in 1900, to 32,162 horse power, or 14.5 per cent. in 1905, a growth during the five years of 26,101 horse power, or 430.6 per cent.

The manufacture of cotton goods showed the most noticeable gain in power used, the increase amounting to 77,316 horse power, or 98.1 per cent. Of this increase, 69.1 per cent. was in steam power and 31 per cent. in electric power, owned and rented. The horse power reported for this industry constituted 70.6 per cent. of the total for the State in 1905 and 66.5 per cent. in 1900.

Large gains in horse power were likewise reported for the establishments manufacturing lumber and timber products and cotton seed oil and cake. the former showing an increase of 10,937 horse power, or 65.4 per cent., and the latter a growth of 8,756 horse power, or 151.4 per cent.

In 1870, 69.6 per cent. of the power used in South Carolina was water; in 1880 it was 53.6 per cent.; in 1890, 35.9 per cent., and in 1900 it had dropped to 23.9 per cent., showing that the development of water powers had not kept pace with the demand for power.

Remarkable Development.—Tables 1 and 2 herewith tell their own story in actual figures and large percentages of increase of the almost magical development of manufacturing in this State, and particular attention is directed to them. The increases of capital in all manufacturing between 1850 and 1905 of 1773 per cent. and between 1882 and 1905 of 723 per cent., coupled with another wonderful increase of over 80 per cent. between 1900 and 1905, and again of over 20 per cent. between 1905 and 1908 (the last in textiles alone), need no comment.

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TABLE 1.—PERCENTAGE, SHOWING RATE OF INCREASE OR DECREASE (*) OF SOME OF THE CHIEF FACTORS CONCERNED IN MANUFACTURES IN SOUTH CAROLINA FROM 1850.

Periods.	Establishments.	Capital.	Employees.	Value materials.	Value products.	Products less materials.
1850-60	*16	14	*1	86	22	*19
1860-70	28	*37	16	*9	*9	*6
1870-80	31	159	94	111	112	114
1850-80	45	85	124	254	136	60
1850-82	241	127	171	403	255	159
1850-1905	*2.1	1773	74.1	165.3	1026	152
1882-1905	*75.3	723	209	256	216	216
1900-1905	2.2	80.8	26.4	51.9	63.9	48.8

TABLE 2.—MANUFACTURES IN SOUTH CAROLINA FROM 1850 TO 1905.

Year.	No. Estab'm'ts.	Capital.	No. Employees.	Wages.	Cost of Material.	Value of Products.
1850	1,430	$ 6,053,265	7,066	$ 1,127,712	$ 2,787,534	$ 7,045,477
1860	1,230	6,931,756	6,994	1,380,027	5,198,881	8,615,195
1870	1,584	4,320,235	8,141	1,234,972	4,684,109	7,886,185
1880	2,078	11,205,894	15,828	2,836,289	9,885,538	16,738,008
1882	4,878	13,771,404	19,215	3,361,725	14,032,531	25,062,574
1890	2,382	29,276,261	22,748	5,474,739	18,873,666	31,926,681
1900	1,369	62,750,027	47,025	9,130,269	30,485,861	53,335,811
1905	1,399	113,422,224	59,442	13,868,950	49,968,861	79,335,811

Tables are given herewith, also, showing the status in 1905 of all the principal manufacturing industries, and other features, which tables require no special explanation.

Early History.—The general development of the manufacturing industry in South Carolina, owing to the fact that the soil and climate were so well adapted to agriculture, did not begin as early in the history of the State as did the pioneer activities upon other lines. Very early, however, South Carolinians were found inventing labor-saving machinery to be used in connection with agriculture, such as for the extraction of indigo, for the threshing and cleaning of rice, mills using tidewater power, being a South Carolina invention of 1778. Ante-dating the establishment of the Patent Office by more than a century, the Colonial Assembly in 1691 passed an Act "for rewarding ingenious and industrious persons to essay such machines as may conduce to the better propagation of the produce of this State." It is recorded that this was the first State to pay Eli Whitney for the privilege of using his cotton gin invention, and the first water-driven gin was started in that year by Capt. Kincaid, near Monticello, in Fairfield County. This State soon became the center of cotton gin manufacturing for the cotton growing States, the factory being operated for years by the Boatwrights on the site where now stands the Richland County court-house in Columbia. The earliest efforts, however, on manufacturing lines were in the manufacture of cotton into cloth, and among the earliest references to cotton manufacturing in South Carolina is a reference in the *South Carolina and American General Gazette* of January 30, 1777. It is stated that a "planter to the Southward" had 30 hands constantly employed making 120 yards of good wearable stuff of woolen and cotton each week; that one white woman had "instructed the negroes in spinning," and "one man" had "instructed them in weaving." It is further said that he expected to be able in this way to be able to make sufficient goods to clothe his own negroes and also to supply his neighbors. The article hails this effort at manufacturing as the most "effectual method of lessening the present exorbitant price of cloth." The history of the textile industry is so fully traced, however, in the section of this chapter dealing especially with textiles.

Very early in the Piedmont counties a number of iron works were in operation, taking the metal from the ore and working it. One in York had a large forge, furnace and a rolling mill; it also had a nail factory, operated with a water blast

*Decrease.

NOTE.—U. S. Census Bulletin 39 figures are used for this year; the U. S. Census of 1900 itself gives 3,762 establishments with $67,356,465 capital and $58,748,781 production; the discrepancy is not explained.

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invented by one of the proprietors. Though the quality of the iron ore of the Piedmont is excellent and the iron is easily worked, the industry has passed away, nothing in this direction being in progress in 1907.

The Hammond Handbook says: "By the census returns of 1810, the Carolinas, Georgia and Virginia manufactured greatly more in quantity and in value than the whole of New England together. These facts, at least, make it plain that neither the original character and activities of the people, or their natural surroundings, such as the climatic or physical features of the country, were hindrances to manufacturing pursuits. That manufacturing has not held a more prominent position among the occupations of the people is by no means wholly due to the great profits accruing to agricultural pursuits. The improvements in spinning and weaving, the invention of the power loom, the development of great iron ore and coal resources, and the consequent activity in the manufacture of machinery of all sorts, which took place in Great Britain in the earlier part of the century, distanced competition in other countries, making English goods far cheaper than any produced elsewhere. But the chief obstacle to manufactures in South Carolina was the institution of slavery. The large land-holders had a monopoly of labor, which, in common with all other monopolies, was adverse to the development of manufactures. More than this, the sentiment against slavery, which spread about this time throughout christendom, isolated the industrial institutions of the South.

"Forced by the necessity of the case to stand by the institution with which, against her protest, she had been burdened, she faced single-handed the public opinion of the civilized world. Feeling that every man's hand was against her, she became suspicious of strangers. Immigration ceased almost entirely, and the elbow-touch with industrial advance of the age was lost; resigning herself almost as exclusively, as she was elsewhere excluded, to agricultural pursuits, South Carolina satisfied herself with such profits as were gained in the culture of cotton, and produced the largest amount of the raw material ever offered in the markets of the world. Even then South Carolina was not unmindful of the great advantages to be obtained from diversified pursuits and the development of manufactures.

"When at length the obstacle of slavery was forever removed, as a result of the War of Secession, step by step with the recovery of the people from the ruin then wrought the interest in manufactures has advanced. Today there is, perhaps, no community more anxious to diversify their, and to engage in, manufactures, than the people of South Carolina."

These utterances were almost a prophecy, as were those of Mr. Gregg in 1845, as they were made just before the doctrine of "bring the cotton mill to the cotton field" was proclaimed throughout the country and the magic development of the decade-and-a-half succeeding took place.

Substantial Growth Begins.—Writing in 1882, Maj. Hammond further says: "The growth of manufactures has been gigantic. In less than one generation there is an increase more than five-fold of the capital seeking investment in these industries; three times as many hands are employed, and six times the value of raw material is converted to human uses. In spite of the much greater cheapness of all manufactured articles, the aggregate value of the products has increased five-fold. The amount of raw material that each hand manufactures is nearly doubled in South Carolina, as well as in the United States, indicating the great advance in skill and efficiency, together with the improvements in machinery."

The decline in manufactures continued after the Civil War until the close of 1876, when the wonderful recuperation began with the restoration of civil government. Social conditions unfavorable to manufactures kept down a material development between 1850 and 1860. The war stimulated manufactures in the country at large, but the material destruction and the period of Reconstruction prevented a material development in South Carolina prior to the restoration of white government. With this accomplished, the census of 1880 shows the remarkable change. In 1882 manufacturing plants were increasing in South Carolina at a rate five times faster than in the country as a whole—indeed, the new plants in South Carolina represented nearly one-third of the increase for the entire United States, showing the trend of the activities of the people. The amount of material used in South Carolina more than doubled, while in the country at large it increased only 70 per cent.

Rank in the 1890-1900 Decade.—During the twenty years preceding 1900 there was a wonderful development in South Carolina manufactures. The State ranked thirty-sixth in value of manufactured products in 1890 and thirty-second in 1900. The increase in wages was 72.7 per cent. and in value of products 84 per cent. The population of the State during this decade increased 16.4 per cent. The

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principal manufactures depended for their raw material largely upon agriculture, and were, therefore, well distributed among the rural districts. The twelve principal cities and towns in 1900 contained 22.2 per cent. of the establishments, paying 39.8 per cent. of the total wages and turning out 39.2 per cent. of the total products, while their population was only 10.2 per cent. of the whole.

Cotton Ginning was an early and general industry in the State and has always been such, but it could scarcely be classed as manufacturing. There were 2,800 of these establishments in 1880, worth about $3,000,000. There were 3,146 active ginneries in South Carolina in 1906, averaging in output 290 bales of cotton each. In many portions of the State in the early days cotton gins were operated by power obtained from small streams by means of "over-shot" wheels. Today there is in the Piedmont one ginnery of this type still being operated, and an excellent picture of it is presented herewith. In Columbia there still stands—and it is faithfully preserved—an abandoned combined ginnery and grist mill of this type which is much admired for its picturesqueness. It is within a few hundred yards of the largest cotton manufacturing establishment under one roof in the world.

The Phosphate Industry.—The phosphate mining industry on the coast began about 1869. The commercial value of the deposits was established the preceding year. In 1870, 1,987 tons of rock came from river mining. By the close of 1882 the annual yield had risen to 140,772 tons. In the following year it was 355,333 tons. In the 90's the newly discovered mines in Tennessee and Florida opened, with a lower cost of production, and the mining industry suffered from a competition from which it has steadily decreased. In 1883 the product was valued at $2,190,000.

Fertilizer Manufacturing Industry.—There were twenty-five fertilizer factories, chiefly small ones, in South Carolina in 1882. This industry has grown immensely, and Charleston is the seat of the industry in America. The present condition of the industry is shown in the following table:

FERTILIZER PLANTS—1907.

County.	Location.	Corporation.	Actual Value.
Anderson.	Anderson, S. C.	Anderson Fertilizer Works.	$105,000
Beaufort.	Port Royal, S. C.	Virginia-Carolina Chemical Co.	98,675
Charleston.	Charleston, S. C.	Ashepoo Fertilizer Co.	149,793
	Charleston, S. C.	Combahee Fertilizer Co.	75,000
	Charleston, S. C.	Etiwan Fertilizer Co.	113,400
	Charleston, S. C.	Germofert Mfg. Co.	24,000
	Charleston, S. C.	Read Phosphate Co.	78,750
	Charleston, S. C.	Va.-Ca. C. Co. (Atlantic Works).	140,747
	Charleston, S. C.	Va.-Ca. C. Co. (Chicora Works).	290,656
	Charleston, S. C.	Va.-Ca. C. Co. (Imperial Works).	317,882
	Charleston, S. C.	Va.-Ca. C. Co. (Standard Works).	466,184
	Charleston, S. C.	Va.-Ca. C. Co. (Stono Works).	72,560
	Charleston, S. C.	Va.-Ca. C. Co. (Wando Works).	32,077
Cherokee.	Blacksburg, S. C.	Virginia-Carolina Chemical Co.	130,000
Colleton.	Pon-Pon, S. C.	Georgia Chemical Co.	67,438
Dorchester.	Dorchester Co.	Gregg Mines.	6,725
	Dorchester Co.	Virginia-Carolina Chemical Co.	6,455
Greenville.	Greenville, S. C.	Virginia-Carolina Chemical Co.	217,886
Greenwood.	Greenwood, S. C.	Greenwood Fertilizer Co.	10,000
Richland.	Columbia, S. C.	F. S. Royster Guano Co.	79,450
	Columbia, S. C.	Virginia-Carolina Chemical Co.	267,799
Spartanburg.	Spartanburg, S. C.	F. S. Royster Guano Co.	25,000
	Spartanburg, S. C.	Spartanburg Fertilizer Co.	26,460
		Totals.	$2,801,937

Fertilizers.—The manufacture of fertilizers ranked fourth in 1905 and third in 1900. There was a decrease of two in the number of establishments reported for 1905, as compared with 1900, and a decrease of $1,244,930, or 25.5 per cent., in the value of products; while the average number of wage-earners decreased 701, or 39.6 per cent., and wages paid, $175,564, or 36.6 per cent.

Table 6 shows the principal materials used, by kind, quantity and cost, and the principal products, by kind, quantity and value, for 1900 and 1905.

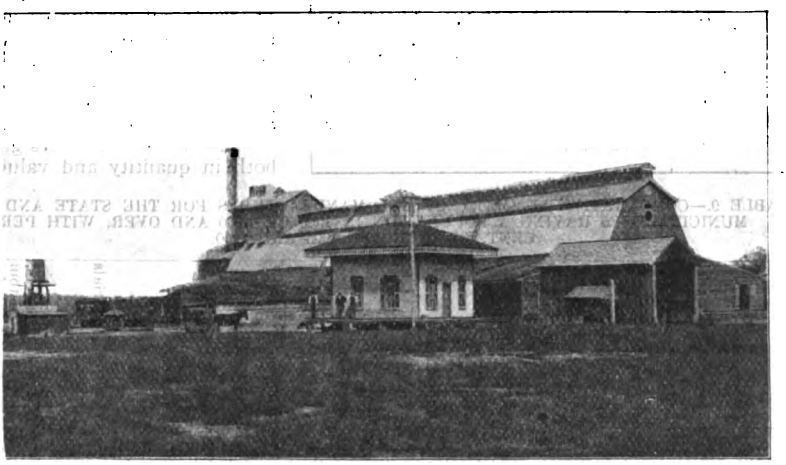
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TABLE 6.—FERTILIZERS—PRINCIPAL MATERIALS USED, BY KIND, QUANTITY AND COST; AND PRINCIPAL PRODUCTS, BY KIND, QUANTITY AND VALUE: 1905 AND 1900.

	1905.		1900.	
	Quantity (tons).	Amount.	Quantity (tons).	Amount.
Materials used:				
Raw—				
Kainit	9,252	$ 110,321	9,114	$ 71,226
Phosphate rock	92,108	375,225	141,464	555,861
Pyrites	42,670	262,340	83,272	399,010
Partially manufactured—				
Potash and soda salts	9,823	392,150	*	392,687
Acid phosphate	20,812	158,846	12,702	121,141
Bones, tankage, offal, etc.	*	240,787	*	1,061,977
†Products:				
Superphosphates	140,087	1,869,125	173,183	1,404,569
Complete fertilizers	57,230	980,263	207,860	3,146,915
Other fertilizers	57,091	648,739	7,497	105,324
Sulphuric acid	4,329	51,864	41,036	225,698

*Not reported.

†In 1905 excludes 1,136 tons of fertilizer, valued at $22,135, reported as manufactured in connection with the manufacture of cotton seed oil and cake.



A FERTILIZER FACTORY.

Of the raw materials, phosphate rock decreased 34.9 per cent. in quantity and 32.5 per cent. in cost, and pyrites decreased 48.8 per cent. in quantity and 34.3 per cent. in cost, while kainit increased 1.5 per cent. in quantity and 54.9 per cent. in cost. Of the partially manufactured materials, those classed as bones, tankage, offal, etc., decreased 77.3 per cent. and potash and soda salts one-tenth of one per cent. in cost, while acid phosphate increased 63.8 per cent. in quantity and 31.1 per cent. in cost.

The most noticeable actual decrease in products was in complete fertilizers, for which there was a loss of 150,630, or 72.5 per cent., in the number of tons produced, and $2,166,652, or 68.9 per cent., in the value. The percentages of decrease, however, were greater for sulphuric acid, being 89.5 for quantity and 77 for value. The increase in the value of other fertilizers was over five-fold, while the increase in the quantity was over six-fold. Superphosphates increased 33.1 per cent. in value and decreased 19.1 per cent. in quantity.

Cotton Seed Industry.—In 1880 cotton seed was selling in South Carolina at an average price of from 10 to 12 cents per bushel, and used almost entirely for manure. There was not an oil mill in the State. In 1882 there were three mills —one in Charleston, one in Greenville and one in Chester—with a combined capacity for working annually into oil and meal and cake 20,000 tons of seed. No industry has more rapidly developed. In 1900, South Carolina ranked seventh in the United States in this industry. The hulls, at first used for fuel, are now used for feeding purposes.

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The recent remarkable development of the industry is almost beyond belief. The figures for 1907 are appended to the sectional chapter on Cotton.

The value of the manufactures of the cotton seed oil mills was of sufficient importance to cause the industry to be ranked third in the State in 1905, as compared with fourth in 1900. This industry was reported by 50 more establishments in 1905 than in 1900, and showed increases of $3,217,306, or 164.2 per cent., in capital; 548, or 74.7 per cent., in average number of wage-earners; and $2,359,393, or 76 per cent., in value of products. Of the 549,480 tons of cotton seed grown in the State in 1904, 213,103 tons, or 38.9 per cent., were used in the oil mills; while of the crop of 1899, amounting to 418,553 tons, 156,642 tons, or 37.4 per cent., were so consumed.

TABLE 7.—COTTON SEED PRODUCTS—PRINCIPAL MATERIALS USED, BY KIND, QUANTITY AND COST; AND CHIEF PRIMARY PRODUCTS, BY KIND, QUANTITY AND VALUE: 1905 AND 1900.

	1905.	1900.
Materials used:		
Cotton seed—		
Tons	213,103	156,642
Cost	$3,767,983	$2,186,408
Products:		
Crude oil—		
Gallons	9,178,661	6,162,218
Value	$2,322,876	$1,545,934
Meal and cake—		
Tons	90,815	57,986
Value	$1,986,895	$1,169,645
Hulls—		
Tons	71,942	71,542
Value	$ 366,795	$ 217,886
Linters—		
Pounds	6,641,495	3,223,892
Value	$ 269,464	$ 110,082

The quantity and cost of cotton seed used, and the kind, quantity and value of the chief primary products, for 1905 and 1900, are given in Table 7.

The quantity of cotton seed consumed in 1905 showed an increase over the amount used in 1900 of 56,461 tons, or 36 per cent. There was an increase of 3,016,443, or 49 per cent., in the number of gallons of crude oil produced, and a gain of $776,942, or 50.3 per cent., in the value. Meal and cake increased 32,829 tons, or 56.6 per cent., in quantity, and $817,250, or 69.9 per cent., in value. Hulls and linters gained both in quantity and value.

TABLE 9.—COMPARATIVE SUMMARY OF ALL MANUFACTURES FOR THE STATE AND FOR MUNICIPALITIES HAVING A POPULATION IN 1900 OF 8,000 AND OVER, WITH PER CENT. OF INCREASE 1905 AND 1900.

Municipality.	Census.	Number of establishments.	Capital.	Wage-Earners. Average Number.	Wage-Earners. Wages.	Miscellaneous expenses.	Cost of Materials used.	Value of products, including custom work and repairing.
The State	1905	1,399	$113,422,224	59,441	$13,868,950	$6,013,241	$49,968,626	$79,376,262
	1900	1,369	62,750,027	47,025	9,130,269	3,131,202	30,485,861	53,335,811
Per cent. of increase	....	2.2	80.8	26.4	51.9	92.0	63.9	48.8
Charleston	1905	108	5,807,280	3,450	1,053,588	403,401	3,747,708	6,007,094
	1900	104	5,397,506	3,187	918,841	342,031	3,506,888	5,713,315
Per cent. of increase	....	3.8	7.6	8.3	14.7	17.9	6.9	5.1
Columbia	1905	41	4,744,883	2,393	797,946	785,831	2,641,506	4,676,944
	1900	41	3,879,429	2,091	518,986	235,921	1,847,977	3,133,903
Per cent. of increase	....	.....	22.3	14.4	53.8	233.1	42.9	49.2
Greenville	1905	36	2,058,837	1,204	257,448	91,225	1,101,328	1,676,774
	1900	22	1,080,585	770	145,300	26,792	717,642	966,452
Per cent. of increase	....	63.6	90.5	56.4	77.2	240.5	53.5	73.5
Spartanburg	1905	35	2,869,039	1,650	347,991	135,052	1,544,078	2,127,702
	1900	28	2,334,585	1,361	270,062	81,400	906,522	1,591,325
Per cent. of increase	....	25.0	22.9	21.2	28.9	65.9	70.3	33.7
Total 4 municipalities	1905	220	15,480,039	8,697	2,456,973	1,415,509	9,034,620	14,488,514
	1900	195	12,692,105	7,409	1,853,189	686,144	6,979,029	11,404,995
Per cent. of increase	....	12.8	22.0	17.4	32.6	106.3	29.5	27.0
Per cent. of total for four municipalities to total for State	1905	15.7	13.6	14.6	17.7	23.5	18.1	18.3
	1900	14.2	20.2	15.8	20.3	21.9	22.9	21.4

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Lumber and Timber Products.—In 1905, as in 1900, this industry ranked second among the selected industries in South Carolina. The number of establishments reported for 1905 was 27 less than in 1900, but the capital increased $3,767,741, or 108.6 per cent., and the value of products $1,849,089, or 37.4 per cent.; while the average number of wage-earners increased 3,034, or 45.8 per cent., and the wages paid $1,221,615, or 90 per cent. This increase, however, does not fairly show the gain in the industry, because a change in the methods of securing the reports in 1905 had the effect of eliminating certain duplications

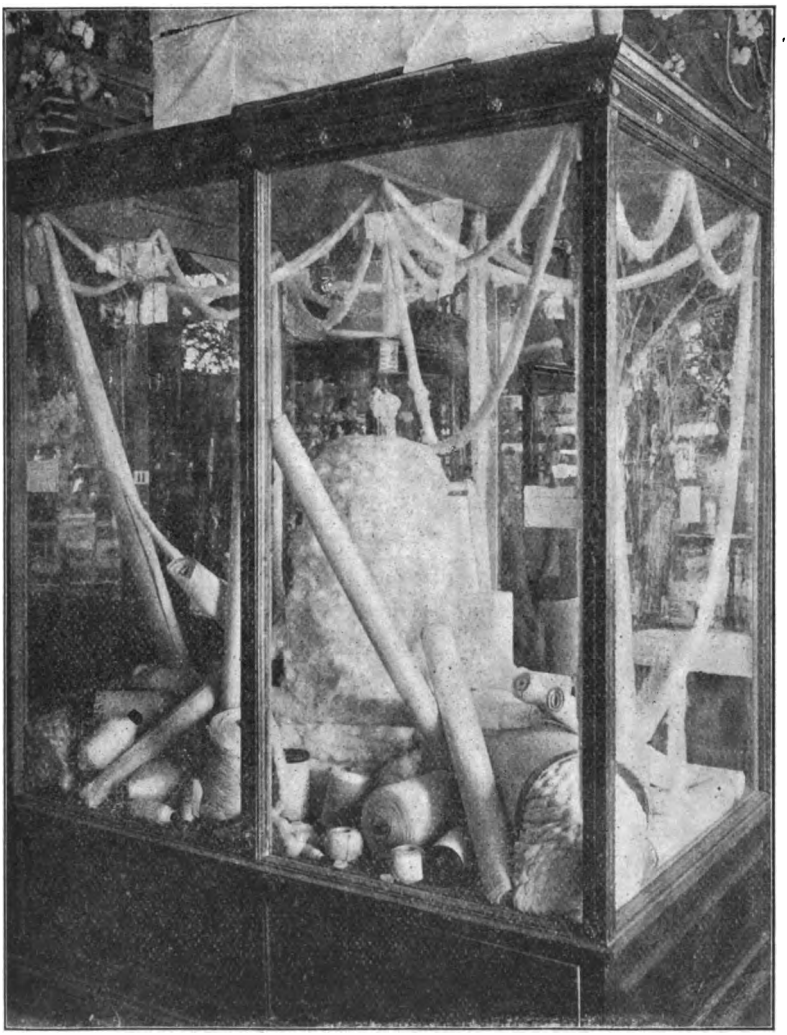


EXHIBIT OF COTTON MANUFACTURED GOODS.

that appeared in the totals for 1900. Had this change not been made, the gain in the value of the products would have been $3,501,432 instead of $1,849,089, and the per cent. 70.8 instead of 37.4, as determined from the totals in Table 2.

A fairer view of the industry, it is believed, may be obtained by a comparison of the output of sawed lumber at the two censuses.

Table 8 shows the quantity and value of the principal varieties of sawed lumber, as reported at the censuses of 1900 and 1905.

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TABLE 8.—SAWED LUMBER—CHIEF VARIETIES, BY QUANTITY AND VALUE: 1905 AND 1900.

Variety.	1905. Quantity (M ft. B. M.)	1905. Value.	1900. Quantity (M ft. B. M.)	1900. Value.
Total	609,769	$6,126,477	425.555	$3,638,124
Yellow pine	549,209	5,205,166	382,557	3,087,827
Cypress	31,187	500,623	25,666	353,922
Oak	12,296	172,429	10,616	114,325
Cotton wood	4,660	66,210	3,050	35,600
Ash	4,213	71,027	1,360	23,700
All other	8,204	111,022	2,306	22,750

There was an increase both in quantity and in value for each variety of lumber shown in Table 6. Yellow pine, which formed about 90 per cent. of all sawed lumber at both censuses, increased 166.652 M feet B. M., or 43.6 per cent., in quantity, and $2,117,339, or 68.6 per cent., in value, between 1900 and 1905.

Planing Mills.—Closely allied with the lumber and timber industry are the independent planing mills. The reports for 1905 showed that there had been an increase of 7 in the number of planing mills since 1900. The capital increased $535,058, or 129.8 per cent., and the value of products $462,253, or 45.5 per cent.; while the average number of wage-earners increased 479, or 96.8 per cent., and wages $145,782, or 99.5 per cent.

It is needless to go further into the details of the several industries. General Table 3 at the conclusion of the section of this chapter, dealing with "Special Manufacturing," shows the essential facts as to every branch of manufactures in the State, and Table 10 shows the same data for the seven leading industries.

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TABLE 10.—COMPARATIVE SUMMARY FOR SEVEN LEADING INDUSTRIES: 1905 AND 1900.

INDUSTRY.	Census.	No. of establishments.	Capital.	Wage-earners. Avg. No.	Wage-earners. Wages.	Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.	Rank.
Total for selected industries for State	1905	768	$103,910,141	52,443	$11,960,345	$4,659,578	$45,076,332	$68,967,742	..
	1900	683	56,306,027	40,959	7,630,378	2,690,562	25,697,225	44,752,138	..
Increase, 1900 to 1905	....	85	47,604,114	11,484	4,329,967	1,969,016	19,379,107	24,215,604	..
Per cent. of increase	....	12.4	84.5	28.0	56.7	73.2	75.4	54.1	..
Per cent. of total of all manufacturing industries in State	1905	54.9	91.6	88.2	86.2	77.5	90.2	86.9	..
	1900	49.9	89.7	87.1	83.6	85.9	84.3	83.9	..
Cars and general shop construction and repairs by steam railroad companies.	1905	8	299,923	1,131	577,191	5,462	432,945	1,080,990	6
	1900	6	354,842	776	363,041	12,555	294,334	691,361	6
Cotton goods	1905	127	82,337,429	37,271	7,701,689	3,229,796	34,308,311	49,437,644	1
	1900	80	39,258,946	30,201	5,066,840	1,507,824	17,263,882	29,723,919	1
Fertilizers	1905	20	7,086,878	1,071	303,885	231,137	2,692,031	3,637,576	4
	1900	22	10,505,043	1,772	479,449	675,589	3,107,710	4,882,506	3
Hosiery and knit goods	1905	14	823,822	1,058	186,721	73,864	586,490	1,078,682	7
	1900	6	345,212	359	73,872	38,887	237,622	392,237	7
Lumber and timber products	1905	439	7,237,725	9,656	2,578,320	791,396	1,617,713	6,791,451	2
	1900	466	3,469,984	6,622	1,356,705	308,203	1,809,009	4,942,362	2
Lumber, planing mill products, including sash, doors and blinds	1905	60	947,186	974	292,321	61,367	885,372	1,478,581	5
	1900	53	412,128	495	146,539	20,042	621,831	1,016,328	5
Oil, cotton seed and cake	1905	100	5,177,178	1,282	320,218	266,556	4,553,470	5,462,818	3
	1900	50	1,959,872	734	143,932	127,462	2,362,837	3,103,425	4

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FRONT YARD OF OLD MILL ERECTED IN 1845.

2

Cotton Manufacturing

Practically as important—if not more important—as the agricultural interests of South Carolina, the cotton manufacturing industry commands supreme attention. This industry has grown as if by magic, and today there is nothing in the South Carolina economic and sociological situation that is of more far-reaching concern and requires more attention. As August Kohn says in his recent series of articles on this subject—and they are frequently quoted in this chapter because of their clearness and accuracy—"Twenty-five years ago the cotton mills amounted to but little in the economic history of this State. Today very many more than one hundred thousand white people are entirely dependent upon this industry for their lievlihood. Today the cotton mills represent three-fourths of the capital invested in manufactures; in 1905 the actual proportion being 72.6 per cent. South Carolina is practically without any of the manufactures that enter into the making of steel and iron products, food stuffs, boots and shoes, furniture, clothing, leather goods, glass ware, agricultural implements, machinery, chemicals or ships. Indeed, it is difficult to realize that within a few years the cotton mills have grown to such an extent in this State that today they pay more than 60 per cent. of the average wages earned by those engaged in all manufacturing enterprises, and that in money expended they represent more than half the aggregate of wages, and that the Government reports that more than 62 per cent. of the total value of the manufactured products of this entire State are from the cotton mills. And incidentally they pay half a million dollars in taxes for the support of the State and municipal governments."



A MILL PRESIDENT AND KINDERGARTEN PUPILS.

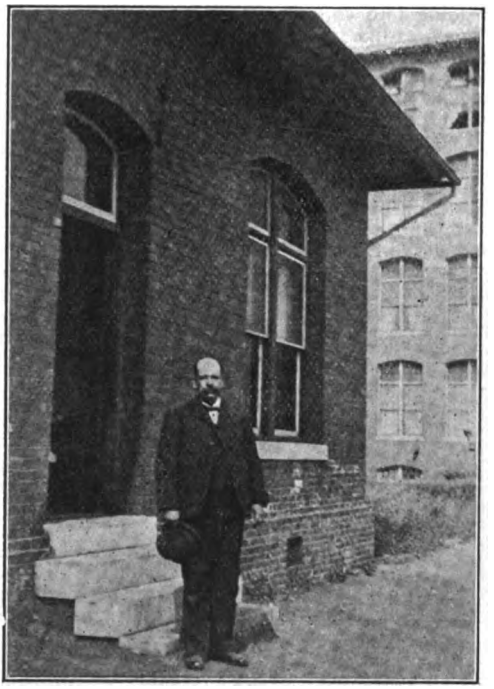
It is not the purpose in this chapter to deal with sociological questions and conditions, for this feature is fully and carefully dealt with by Mr. Kohn, whose articles have already been issued as a publication of the Department of Agriculture, Commerce and Immigration, but it is the purpose to trace the development of this industry and to give concisely and compactly facts and statistics showing the present status of the industry in its relation to cotton consumption and manufacturing in the United States.

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For an industry so important to the commercial fabric of the State, this is no easy task, and it is attempted with misgivings. It must be considered, however, that every possible attempt is made to accurately present only the real facts as gathered by persons so inclined from patriotic reasons, by the State itself, impartially, and by the United States Government. In tracing the history of the cotton manufacturing industry there is no desire to magnify, for it is of sufficient force of itself, and the facts amply sustain the general statements made in the opening of this chapter. South Carolina's record is a proud one, and justly so. The next decade's history will show that the industry is in sane and safe hands, and a still greater development with a still greater amelioration of the living conditions of the operatives may be expected, if laudable efforts be not interfered with during the next decade. There are men in South Carolina identified with the industry who are as anxious to improve conditions as the most fanatical of anti-Southern agitators—good and honorable men, who ever strive for the uplifting of the laborer. After a study of conditions abroad, the writer has no hesitancy in saying that in the South today greater headway is being made in work for the betterment of the condition of the individual operative than in any other portion of the world. It is due to the Southerner's idea of chivalry and fairness, and it must be remembered that most of the mill men of the South Carolina of today are members of families in which these ideas have been inculcated for generations.

The next decade should, and doubtless will, show a degree of development that is as phenomenal as any in the history of the industry in South Carolina, in which event South Carolina will not only retain the position she has attained, but will most likely reach nearer and nearer to the goal of supremacy set by Massachusetts.

Herewith are presented tables showing the development of the industry from 1840 to date, a census of all the plants in the State in 1907 having been made and completed as this is written. Most interesting and important are the tables herewith, showing the increases between 1900 and 1905, according to United States census figures. They are self-explanatory and show a degree of development rarely attained in any industry.



SUPERINTENDENT WHO BEGAN WORK AT 8 YEARS.

It is impossible in the scope herein to enter into the details of "child labor," or to tell whence come the people who make up the cotton mill population of South Carolina, though these two subjects are touched upon. Another question that is paramount with the cotton manufacturing interests is how to get the additional help that is at this time needed for the further development of the industry—whether it is best to fight inch by inch for native help or to follow the example of Massachusetts and secure foreign people to fill the vacant places at the machines. This question at this time is in process of evolution, and the solution is not far distant, for today in all parts of South Carolina existing spindles are standing idle.

History.—The history of cotton manufacturing in South Carolina reads almost like a romance, so rapid and substantial has been its development. At this time it is almost impossible to ride ten miles in certain portions of the State without wearying the eyes with the panorama of cotton mill stacks, from which the smoke is pouring. In this connection, August Kohn's summary of the history of the industry, with certain additions, is a most valuable contribution to the industrial history of the State, and is utilized with his permission:

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PRIMITIVE MOUNTAIN HOME.

"When the true history of the cotton mills is written," he says, "it will be found that South Carolina was probably the very first State to undertake the development of cotton manufacturing. From what can be gathered, it is safe, historically, to date the development from 1790, when cotton mill machinery was built along English lines. Various writers hold that the power loom was not used in England until 1806, and that it was not until 1812 or after that the power loom came into use in America.

"It is perhaps just to concede to Slater the distinction of going into cotton mills in a business-like way, but the claim that the first mill built was erected at Beverley, Mass., in 1787, is questionable, and the distinction of having the first cotton mill most probably belongs to South Carolina, as well as does the distinction of being now foremost in their development among the Southern States.



AFTER GOING TO THE MILL.



ENTERING THE MILL.

"The cotton manufacturers have had a rough road to travel in South Carolina. Prior to the war the chief difficulty was on account of the prejudices against cotton mills, and the belief that the labor could be more profitably used on the farms. Up to the close of the war colored slave labor was very largely used in cotton mills. After the terrible struggle brought about by the War between the States and Reconstruction, there was no money with which to build cotton mills. It was not until the early eighties that the cotton mill industry was given the impetus by such men as Hammett, Converse, Montgomery, McCaughrin and Smyth, protagonists in an industry that has led up to the present era of prosperity and given this State more than three and a half million active spindles.

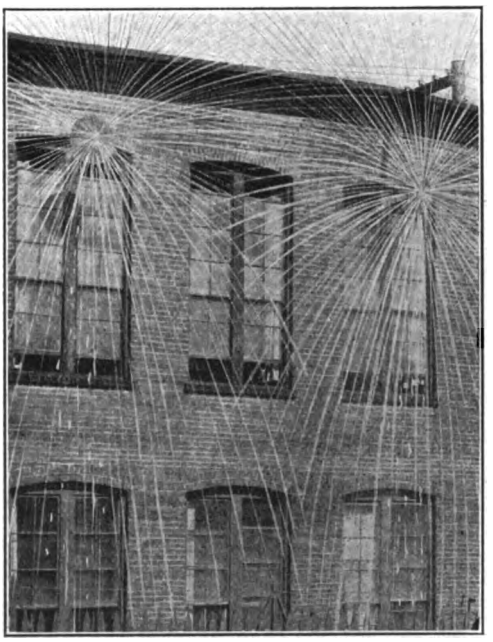
"In looking over Gregg's 'History of the Old Cheraws,' this interesting reference, from a Charles Town *Gazette* of December 22, 1768, establishing the fact that cotton goods were made in this State as early as 1768, will be of especial interest: "A gentleman of St. David's Parish, in this province, writes to his correspondent in Charles Town: 'I expect to see our own manufactures much promoted in this part of the province. I send you some samples of what hath been already done upon this river and in this parish. The sample of white cotton was made in the proportion of twelve yards to one pound of cotton. Hemp, flax and cotton may be raised here in any quantity; as to wool, one cannot have much of it.'



OPERATIVES GOING HOME TO LUNCH.

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"Later on the *Gazette* of March 2, 1769, says that cotton goods were still being manufactured, and that there was a growing demand for such products. This reference reads: 'It was stated in the *Gazette* of March 2, 1769, that 'Many of the inhabitants of the north and eastern parts of this province have this winter clothed themselves in their own manufactures; many more would purchase them if they could be got; and a great reform is intended in the enormous expense attending funerals, for mourning, etc., from the patriotic example lately set by Christopher Gadsden, Esq., when he buried one of the best of wives and most excellent of women. In short, the generality of the people now seem deeply impressed with an idea of the necessity, and most heartily disposed, to use every means to promote industry, economy and American manufactures, and to keep as much money amongst us as possible.'



SPRAY FOR COOLING MILL.

"In 1770 there seems to have been a general movement towards developing the State along manufacturing lines. and a committee to establish and promote manufactures in the province was organized, with Henry Laurens, Esq., as chairman and treasurer of the organization. Petitions were circulated for the raising of money, and it appears that considerable funds were raised for the promotion of manufacturing in this State at that time.

"There evidently was considerable manufacture of cloth goods in this province prior to and during the Revolutionary period. In those days it does not appear to have been popular to organize corporations, and the manufacturing was done by individuals—most of the planters being amply able to conduct such operations.

"Governor Glen, in his 'Answers to the Lords of Trade,' reprinted by Weston in his 'Documents Connected with South Carolina,' on page 86 of Weston, under the heading 'A List of all Such Goods as are Usually Imported.' Governor Glen says: 'Linnens of all kinds, from cambks to oznabrigs, of the manufacturing of Germany, England, Scotland and Ireland, to a great value, being all that are used here, *except a few made by the Irish township of Williamsburg, like Irish Linnen.*'

"Governor Glen was appointed Governor in 1739; recalled January, 1755, and his report was probably written in 1748 or 1749, as 1748 is the last year of which he gives statistics in several tabulated statements. This clearly indicates that even at this early date (1748) that the Carolina colonists were manufacturing cloth goods, at least for home consumption.

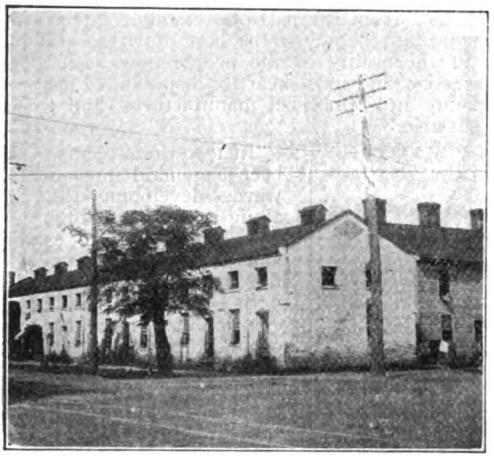


HOUSES WHICH REPLACED OLD TENEMENTS.

"I have before me a letter, dated Charles Town, February 19, 1777, and written by Daniel Heyward, the father of Thomas Heyward, Jr., who was one of the signers of the Declaration of Independence from South Carolina. The letter was

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addressed to Mr. Thomas Heyward, Jr., who was then attending a session of the Continental Congress, and in it Daniel Heyward says: 'My manufactory goes on bravely, but fear the want of cards will put a stop to it, as they are not to be got; if they were, there is not the least doubt but that we could make six thousand yards of good cloth in the year from the time we began.'



THE LAST MILL TENEMENT.

"This certainly shows that the Heywards conducted a considerable plant for the manufacture of cotton goods; and no doubt other individual planters made their own cotton clothes in the same way, because the United States Government Reports indicate that up to 1810 all of the established plants throughout the entire country made less than one million yards of cloth goods, while the planters and individuals made for 'family use' more than fifteen million yards of cloth goods. The industry was evidently then largely due to personal initiative.

"In the *South Carolina and American General Gazette* of Thursday, January 30, 1777, there is this interesting evidence of the substantial development of cotton spinning and weaving among our people: 'We are well informed that a planter to the northward, who three months ago had not a negro that could either spin or weave, has now thirty hands constantly employed, from whom he gets 120 yards of a good, wearable stuff, made of woollen and cotton, every week. He has only one white woman to instruct the negroes in spinning, and one man to instruct in weaving. He expects to have it in his power not only to clothe his own negroes, but soon to supply his neighbors. The following so laudable an example will be the most effectual method of lessening the present exorbitant prices of cloth.'

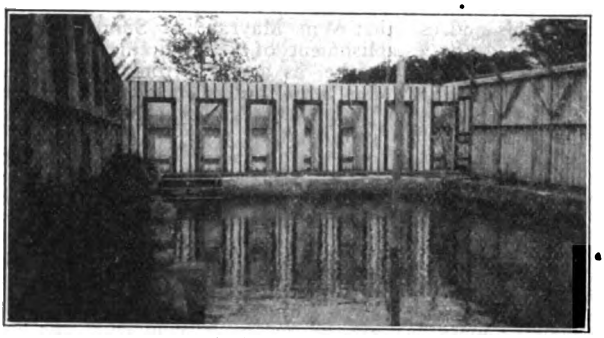


AFTER SCHOOL RECESS.

"There is abundant reason to believe that in 1787 Mrs. Ramage, a widow living on James Island, Charleston District, South Carolina, established a regular cotton mill, which was operated by mule power. The *City Gazette and Daily Advertiser*, of Charleston, in its issue of January 24, 1789, contains this news item: 'It is with genuine pleasure we mention that Mrs. Ramage has commenced the manufacture of cotton cloth on James Island, which we sincerely hope will meet with that encouragement and support which will enable her to carry it on to such an extent as may induce others to follow so industrious and laudable an example, and which may render in a few years the importation of manufactures almost unnecessary. It is obvious to the discerning that the raw materials can be raised in this State on preferable terms to others that it must seem surprising manufactures of various kinds are not now adopted, as they certainly would be more advantageous to the citizens at large than any other species of speculation." Some doubt has been cast upon this venture of Mrs. Ramage, because there is no trace of the plant to be found at this time. Mr. A. S. Salley, Jr., Secretary

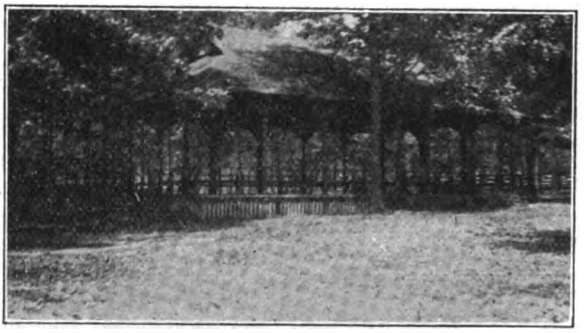
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of the South Carolina Historical Commission, advises me that there were a number of Ramages living in Charleston during that period and that a Mrs. Ramage was a tavern-keeper there.



MILL SWIMMING POOL.

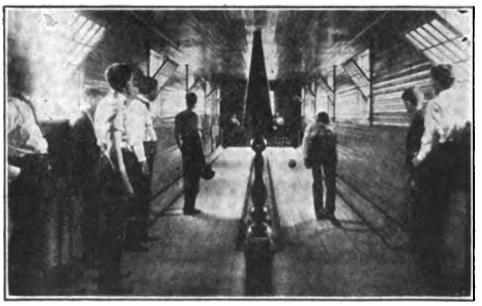
"The histories of the cotton mill industry have generally credited the starting of the industry in South Carolina in 1790, but, as has been shown, there evidently was considerable manufacture prior to this time; but the historical workers are now paying credit to South Carolina as having had the first 'Arkwright Cotton Mill in America.' because they find reference to such a plant in English publications.



MILL DANCE PAVILION.

"I take from the *American Museum*, VIII, Appendix IV, page II, July 1, 1790, this really interesting item:

"'A gentleman of great mechanical knowledge and instructed in most of the branches of cotton manufactures in Europe, has already fixed, completed and now at work on the high hills of the Santee, near Stateburg, and which go by water, ginning (?) carding and slabbing machines; also spinning machines, with 84 spindles each, and several other useful implements for manufacturing every necessary article in cotton. There is also a fulling and dressing mill for fine and coarse woollens established and at work on Fishing Creek, near the Catawba River, in full employ by the neighboring spinners and weavers, where woollens are dried, pressed and finished with great neatness by artists from Great Britain.'



OPERATIVES BOWLING.

"It is evident that the manufacture of cloth goods in this State took permanent shape before the beginning of the nineteenth century. Hammond, in his excellent Handbook, page 574, has this statement with reference to the early efforts in cotton manufacturing:

"'Before and during the Revolution the families of planters and their slaves were clothed in cotton homespuns made in the State. A factory, weaving these goods for the supply of the adjacent country, was established some years previous to 1790 by the Scotch-Irish settlers at Murray's Ferry, Williamsburg County, and Mr. Benjamin Waring established, in the latter part of the last century, a cotton factory near Stateburg, for spinning and weaving Manchester cotton stuffs. There is an interesting and full account of this plant in Drayton's View of South Carolina, 1802, pages 149-50.'

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"An article from the *Southern Quarterly Review* for July, 1845, page 145, gives some interesting information regarding this early Stateburg effort, which is twice referred to in the early efforts along these lines. Mr. John B. Miller in 1845 wrote:

"'Mr. Roper tells us, in his address, that Wm. Mayrant, of Sumter, was the first individual who attempted the establishment of a cotton manufactory in South Carolina. This, however, is a mistake, as appears from the following extract of a letter from Sumterville, in this State, published in the Charleston *Courier* of February 26, 1845, giving some reminiscences of a manufactory established in that vicinity more than a half century ago:

"'Permit me to give you some account of a cotton manufactory that once was in operation near Stateburg, Sumter District, S. C., about five miles south of said village, on the road to Charleston, on or near the plantation of Mr. Benj. Warren (Waring), deceased. It was commenced in 1789 or 1790 by Mr. John McNair (my stepfather), Mr. B. Waring, I think, also, Mr. George Poor, Mr. Templeton and Mr. Rogers. The machinery was made in North Carolina. There was a carding machine—I think for spinning—a reel that would reel 18 hanks. It remained a few years at the above place, and the copartnership was dissolved, and the carding, two spinning machines and the reel were removed to the plantation of Mr. McNair, near Stateburg, on a plantation now belonging to the heirs of Mrs. Rutledge, deceased. It was there worked a few years. Mrs. McNair died and the machinery was sold to some person in Lincolnton, N. C. At this manufactory was manufactured huckaback, fustian, corduroy, jeans, bed ticking, bed quilts, figured and colored, plain white homespun and cotton stockings. Much cotton was spun for persons in this vicinity. Some long staple cotton was imported from the West Indies. I was very young at the time, therefore have not as full a knowledge of the same as I could wish. If the above will be of any use, or will impart any information on this subject, you are at liberty to make this public.

"'I am, sir, respectfully yours, John B. Miller.

"'N. B.—There was a nail and weeding hoe establishment in Sumter District, near this place.'



A COTTON MILL FAMILY.

"In the early history of the State, as was the general custom of the times, lotteries, with the approval of the State Government, were quite popular; in fact, any one looking over the early statutes will find that money was raised for the building of the Episcopal Church at Georgetown, for the Second Presbyterian Church in Charleston and for a church in Greenville, as well as for Trinity and the First Presbyterian Church in Columbia, by means of public lotteries. It was, therefore, not considered 'bad form' to have a lottery for the 'encouraging of manufacturing in this State'; and in the Statutes of 1795 I find an Act 'to authorize a lottery, the profits whereof shall be appropriated to the promotion of useful manufactures in this State.' I quote the first paragraph of the statute because of the importance of the State's aid to cotton manufacturing. The Act follows:

"'Whereas, William McClure hath petitioned the Legislature to assist him in establishing a cotton manufactory in this State, and it would be very advantageous to this State to have useful manufactories established in the same:

"'I. Be it therefore enacted, by the honorable the Senate and House of Representatives, now met and sitting in General Assembly, and by the authority of the same, That a lottery shall be established and drawn, and finally concluded and completed, the profits whereof, after deducting the necessary expenses attending the same, shall be applied towards the promotion of useful manufactures in this State; that a profit shall be raised by the said lottery not exceeding the sum of eight hundred pounds; that Thomas Lehre, William Turpin, Col. Thomas Taylor, John G. Guignard, Benj. Waring, John Simpson and John Hunter, shall be, and

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they are hereby appointed, commissioners to conduct and manage the same; and the said commissioners, or any three of them, shall adopt such scheme or schemes for the purpose aforesaid as they may judge most proper, and shall appoint such time and place for drawing the same as they may think most advisable.

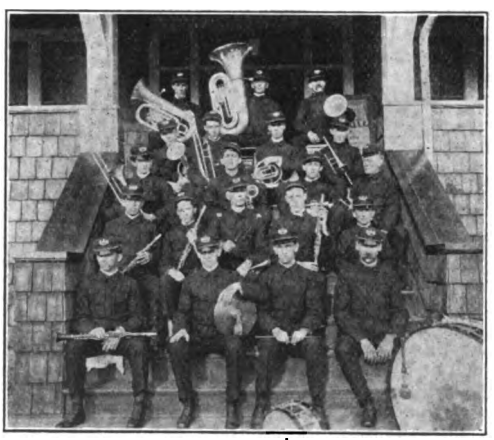
"'II. And be it further enacted by the authority aforesaid, that the said commissioners shall pay unto the said William McClure four hundred pounds out of the profits of the said lottery, two hundred to be paid as soon as they shall receive a sufficient amount to enable them to pay the same with propriety, and the remainder to be paid when the said lottery shall be drawn and completely concluded: Provided, that the said commissioners shall, in trust for the State, previously taken from the said William McClure an obligation or obligations under the penalty of twice the amount paid to him, with such security as they shall deem sufficient, with a condition that he shall, within a certain time, by them to be ascertained, erect and complete a manufacture of cotton into what is commonly called and known by the name of Manchester wares, in which manufacture the said William McClure shall constantly employ and instruct at least as many as seven white persons for the term of seven years.

"'III. And be it further enacted by the authority aforesaid, that the said commissioners shall hold the rest of the profits of the said lottery, and shall apply them towards the promotion of such useful manufactory or manufactories as they may think deserving their donation or support, taking care to require and take from every person to whom they pay any part of the said profits such a bond or bonds as they are directed to take from the said William McClure: Provided, that no appropriation of remaining at the disposal of the commissioners shall be made without the concurrence of five or more of the commissioners appointed by this Act.

"'In the Senate and House the 12th day of December, in the year of our Lord one thousand, seven hundred and ninety-five, and in the twentieth year of the independence of the United States of America.

"'David Ramsay, President of the Senate.

"'Robert Barnwell, Speaker of the House of Representatives.'



MILL OPERATIVES' BAND.

"Of course every one remembers that South Carolina appropriated $50,000 for the purchase of the patent rights of Messrs. Miller & Whitney for what is now known as the Whitney gin. This was the substantial encouragement that South Carolina gave to Eli Whitney as early as 1801 towards the development of his patent for "cleaning the staple of cotton from seed."

"In the office of the Secretary of State at Columbia there is a volume entitled 'Georgia Grants,' on the first page of which is this inscription:

"'Register Book of the Titles of Books to be Published in the State of South Carolina, kept in pursuance of an Act of the Legislature of the said State passed the 26th day of March, 1784—entitled an Act for the Encouragement of Arts and Sciences.'

"On the three succeeding pages copyrights and patents are recorded, after which such recording was discontinued, and the remainder of the volume was used to record the plats and grants of such lands lying on the north side of the Toogaloo, as had been granted to settlers by Georgia authorities under the impression that the territory lying between the Toogaloo and Keowee rivers belonged to Georgia.

"This is a copy relating to the cotton industry and shows the early efforts in this State:

"On the 13th day of March, 1789, Hugh Templeton has deposited in the Secretary's office two plans, one said to be 'a complete draft of a carding machine that will card eighty pounds of cotton per day'; the other 'a complete draft of a

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spinning machine, with eighty-four spindles, that will spin with one man's attendance ten pounds of good cotton yarn per day.'

"On the 1st day of April, 1789, John Curry, of the city of Charleston, has deposited in the Secretary's office a model of a machine for picking or ginning cotton.

"Again, there is in the appropriation bill for 1809 a paragraph emphasizing the desire of this State to foster cotton manufactures. It reads: 'To Ephraim McBride, to be advanced to him on the conditions contained in a resolution of this branch of the Legislature, to enable him to construct a spinning machine on the principles mentioned in a patent he holds from the United States, one thousand dollars.'

"The records show that about 1809 there was a factory 'for making check goods, handkerchiefs at Charleston, which turned out some very pretty goods.'

"1808 the homespun fad seems to have become acute, and the resolutions of the House of Representatives for that year show that at the June session a resolution was passed that all members of the General Assembly should appear during the sessions clad in homespun suits.



SCHOOL RECESS.

"The next year, 1809, the Homespun Company of South Carolina made an effort to secure an appropriation on account of another patent, but the effort failed, as this paragraph from the resolutions of that year indicates: 'Report of the committee on incorporations on the petition of John Johnson, Jr., president of the Homespun Company of South Carolina. That they have considered the same and cannot recommend the granting the loan prayed for; but do recommend that the said South Carolina Homespun Company be allowed until the next meeting of the Legislature to report on the utility of the machine called the Columbia Spinster, so as to entitle, in case the same be approved, the inventor of the same to the sum provided by law for his benefit.'

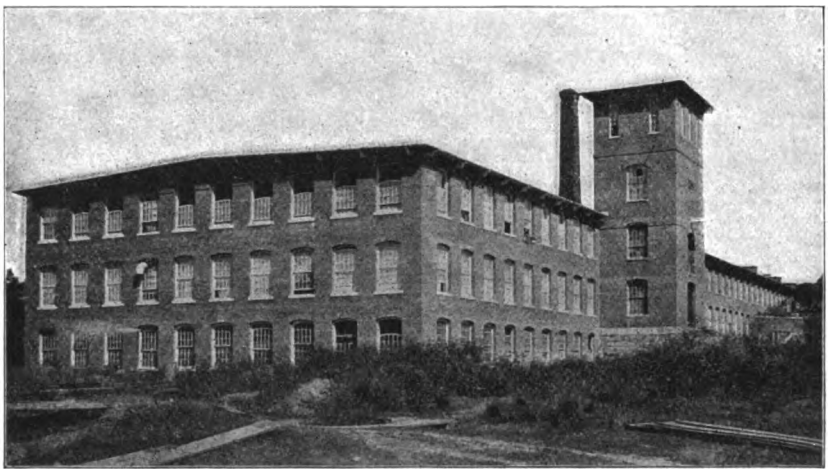
"'The South Carolina Homespun Company, of Charleston (1808), was the most important and pretentious undertaking in the cotton mill industry up to that time. Dr. John L. E. W. Shecut appears to have been the moving spirit in this enterprise. He was elected president of the corporation at a meeting of the promoters, held the 26th of September, 1808, and from that time on there are considerable references concerning this enterprise. The exercises incident to the laying of the cornerstone brought out a gathering of three thousand people, and the occasion seems to have been one of great importance in Charleston. The address at the laying of the cornerstone was delivered by the Right Worshipful William Loughton Smith, but unfortunately the address, which I have had copied from the Charleston *Courier* of October 31, 1808, gives practically no facts, but is a general dissertation on the beauties of labor and the glories of the State of South Carolina. About the only real fact in the entire address is contained in this paragraph: 'You have just witnessed the ceremony of laying the cornerstone of the first edifice, intended for domestic manufactures, on a great scale, in this part of the Union; and you have witnessed the interesting ceremony with emotions corresponding with the dignity and solemnity of the occasion. Permit me to congratulate you, and my country at large, on this first step towards the completion of an establishment, from which, in view of the cold support from doubting friends and the warm opposition of decided foes, we may entertain flattering anticipations of the most successful results.'

"'It is interesting, one hundred years after the delivery of what was a memorable address, to read what Mr. Smith, the head of the Masonic order at that time, said about the prospective cotton mill. Here is one of the climaxes of his address:

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"'Here will be found a never-failing asylum for the friendless orphans and the bereft widows, the distribution of labor and the improvements in machinery happily combining to call into profitable employment the tender services of those who have just sprung from the cradle, as well as those who are tottering to the grave, thus training up the little innocents to early and wholesome habits of honest industry, and smoothing the wrinkled front of decrepitude with the smiles of competency and protection. Here, too, will be found an everlasting refuge for those unfortunates of other climes, expatriated, with their useful talents, by the iron hand of unrelenting despotism, or the intolerable pressure of taxation and hunger and wafted by the sighs of fellow-misery to seek liberty and bread on these happy shores.'

"Major Edward Willis, of Charleston, who is a grandson of Dr. Shecut, says that the Carolina Homespun Company's plant is now used by the Barton Lumber Company, and that the original building, which was of brick, is still standing, and is in use by the Barton Company at its plant on the Ashley River, at the foot of Wentworth street.



WALHALLA COTTON MILL.

"The South Carolina Homespun Company was organized with a capital stock of $30,000, but evidently this was not sufficient with which to operate the plant, because during the session of 1810 the General Assembly authorized a lottery to be conducted for the raising of money with which to complete the plant, provided 'there shall not be raised by means of this lottery a sum exceeding $18,000.'

"Credit is due to the men who withstood general opposition, and invested their money in this initial plant in Charleston, and I am here quoting the inscription which was on the northwest corner of the plant of the Carolina Homespun Company.

"While this industry was taking some shape on the coast there also appears to have been an effort to establish cotton mills in the Piedmont section, and this extract from the resolutions of 1812 indicates how the General Assembly coöperated with enterprising citizens of Greenville District in the efforts to establish a plant in upper Carolina.

This stone was laid on Monday,
24th October, 1808,
by
Dr. John L. E. W. Shecut, President,
and
Johnathan Lucas, Jr.—Col. Daniel Stevens.
John Johnson, Jr.—C. B. Cochran.
Thos. Bennett, Jr.—Major Robert Howard.
John Horlbeck, Jr.—Dr. Joseph Kirkland.
Directors.

"The legislative committee reports: 'The committee to whom was referred the petition of certain persons praying aid to enable them to establish a cotton manufactory, having had the same under consideration, respectfully report:

"'That from the information given them it appears that the purpose of the petitioners is to establish at some suitable place in Greenville District a manu-

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factory for carding, spinning and weaving cotton, the machinery to be impelled by water, the number of spindles to be employed not less than 500, which is calculated will prepare thread sufficient for weaving 250 yards of cloth per day. The sum with which the petitioners pray to be aided is $10,000, to be repaid with 7 per cent. interest, one-half at the expiration of two years, the balance at the expiration of three years; and the said payment to be secured to the State by a mortgage of real estate, of the value of not less than $100,000. The committee, therefore, impressed with the importance of encouraging domestic manufactories, and believing that the small loan solicited may be extended to the petitioner without inconvenience or loss to the State, recommend that the prayer of the petitioner be granted, and that a clause to that effect be inserted in the appropriation bill.' The plant seems to have been established, but what became of it is not recorded.

"From this time on the development seems to have been more or less spasmodic, but the industry was going through its experimental period in this State, and meanwhile it was being hammered at by the real leaders among Carolinians.

"Calhoun and Langdon Cheves and the others who were conspicuous in their leadership really thought that cotton mills had no place in the economic develop-



COX MANUFACTURING COMPANY, ANDERSON.

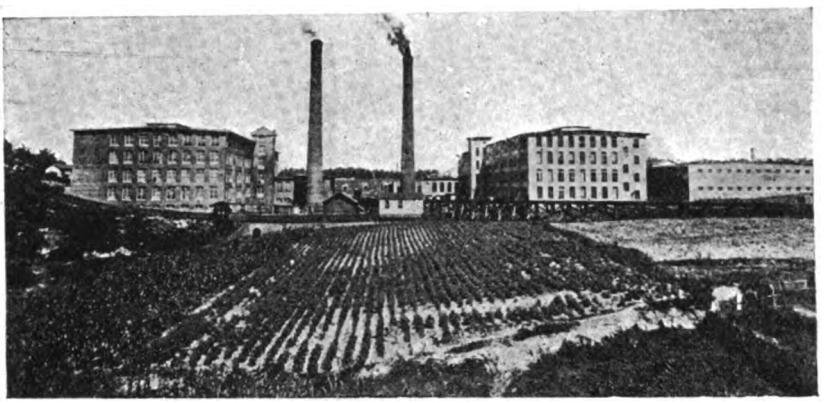
ment of South Carolina. Jefferson was bitterly opposed in his early days to cotton mills, and John Randolph in an address said that "the cotton mills in the South would bring yellow fever, not in August merely, but from June to January, and from January to June."

"Langdon Cheves, who was a leader of exceeding popularity, is quoted in the *Southern Quarterly Review* for 1845 as having said that 'manufacturing should be the last resort of industry in every country, for one forced as with us, they serve no interests, but those of the capitalists who set them in motion, and their immediate localities.' This expression was not peculiar to any one class of leaders in South Carolina at that time.

"About 1816 New England settlers went to the upper part of Carolina and laid the foundation for the tens of thousands of spindles which were in due course of time to hum in the Piedmont belt. Among these pioneers who went to the foothills of the Blue Ridge were George Hill and Leonard Hill, W. B. Shelden and Clark, William Bates, who was the grandfather of Mr. J. D. Hammett, the present successful president of the Chiquola Cotton Mills, at Honea Path; John Weaver and James Edward Henry. All of these men came about the same time, and several of them came together. It is most interesting to follow the work of these New Englanders, who came to this State to try to make a success of manu-

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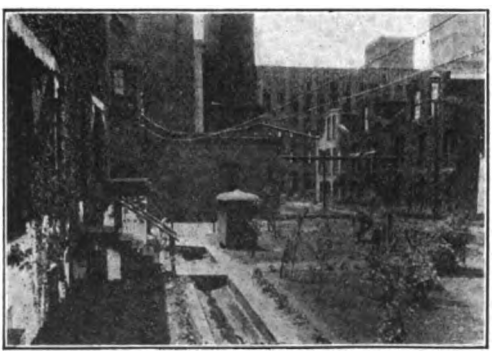
facturing 'cotton thread.' It is not essential whether the Hills or the Weavers started their factory first, but it is evident that the Hill factory, which was begun by Leonard Hill and John Clark (of Rhode Island), and which was probably the Industry Manufacturing Company, was started about the same time as the plant which was erected by Philip Weaver, Lindsay Weaver, Thos. Hutchings, William Bates and John Stack. They both started their machinery about 1818. Mr. R. Furman Whilden, of O'Neall's, thinks that the Weavers started their factory first, and that the Hills were just a little later than the Weavers. The Weavers



SPARTAN MILLS.

borrowed money from W. G. Davis and Col. Nathaniel Gist, and failed in 1819, when the court records show that a judgment for $12,000 was secured against them, but they continued to run the mill until 1821, when Weaver appears to have gone to Greenville County—his first plant having been erected on the Tyger River; and a short distance from this was the plant of Leonard Hill and John Clark.

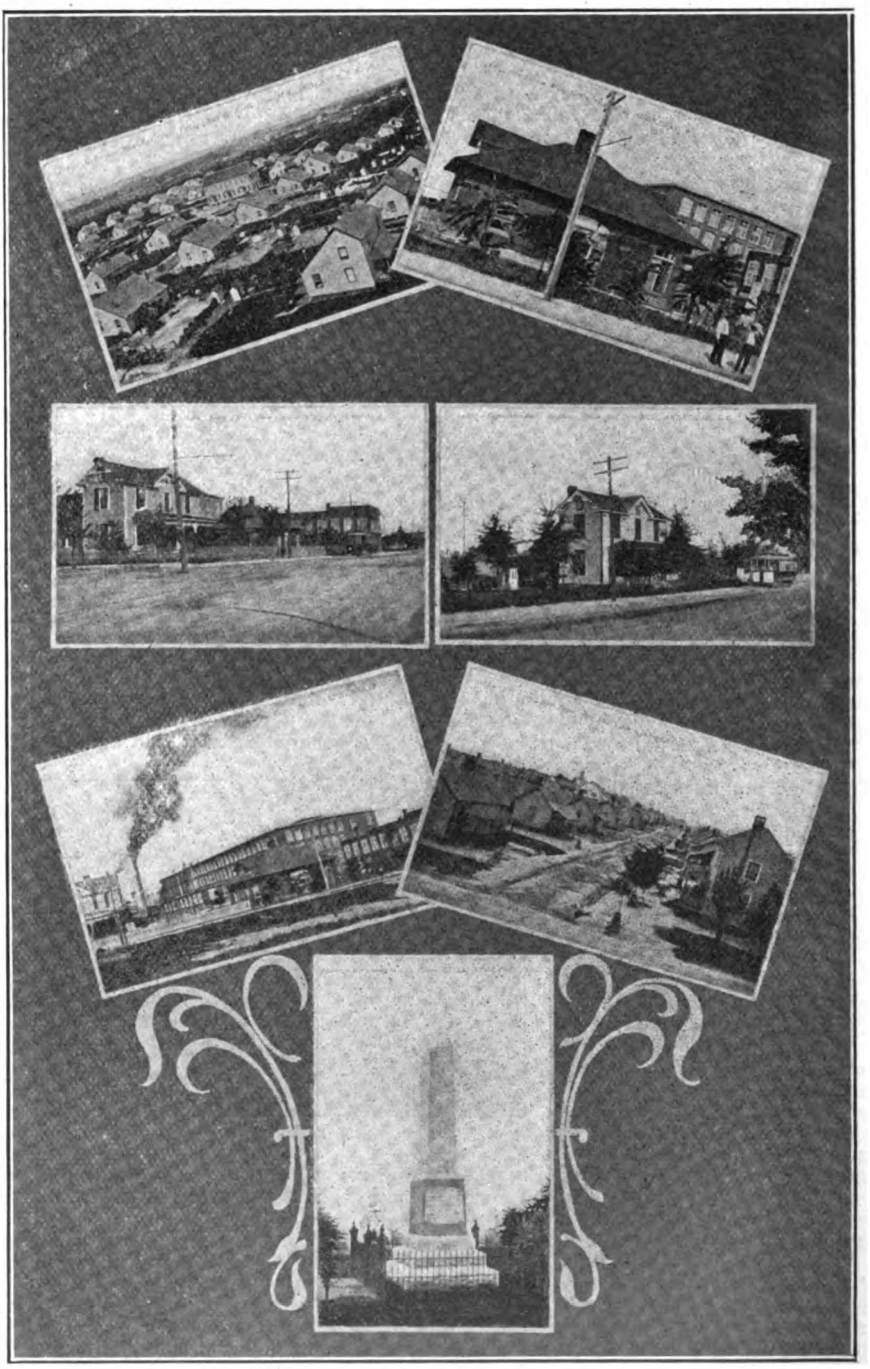
"Landrum, in his history of Spartanburg, is rather inclined to give the Hills the credit of having established the first cotton mill in Spartanburg County on the banks of Beaver Dam, and it is his opinion that the 'Burnt Factory,' which is the plant of the Weavers, was built a little later, but Mr. Whilden is decidedly of the opinion that the Weavers' and Bates' mill was the first to be built in Spartanburg.



A MILL BACK YARD.

"Neither of these plants exist today, but the property on which Leonard Hill built his first mill now belongs to the Enoree Manufacturing Company, one of the most prosperous corporations in Spartanburg County. William Bates, who was the father of Miss Bates, who married Col. H. P. Hammett, the founder of Piedmont, tried his fortune at Rutherford, N. C., came back to South Carolina and took charge of a local cotton mill, which was afterwards known as the Batesville Mill, and which is now in successful operation by Mrs. Mary P. Gridley, the only woman I know of who is the president of a factory. The present plant seems to have been started in 1848, although the site had previously been used for cotton manufacturing. In 1848 William Bates put in two spinning frames; and in 1858 this was followed by another plant on the other side of the stream, now known as Pelham. The building was burned in March, 1881, but was immediately rebuilt with a brick building, in which the present operations are conducted."

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SCENES AT THE ANDERSON MILLS, SHOWING MONUMENT TO JAS. L. ORR.

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"The Hill factory in 1816 or 1817 contained 700 spindles, and of course it is to be remembered that all of the machinery had to be hauled from Charleston to Spartanburg County by wagon. Hill died in 1840. The Rev. Thos. Hutchings, who was associated with Wm. Bates and Weavers in the original enterprise, seems to have been a man of action in his day and generation. After his experience with the Burnt Factory he went to Pelham, where he erected a mill which began operations in 1822. At this time Pelham was known as Lester's Ford. Later on Hutchings sold his plant on the Enoree and built near Batesville about 1833. And again in 1837 he built on South Tyger, at what is known as Cedar Hill.

"As to the development in Greenville County, Col. S. S. Crittenden writes his personal recollections as follows:

" 'I can only tell you from my recollection, which goes back to about 1835, that at that time, in my early boyhood, there were three old cotton mills in Greenville County. One was Vardry McBee's, on Reedy River, six miles from the village, which operated spinning cotton yarn for many years before and after the war. After various changes this mill is still in successful operation, and, of course, much enlarged, as 'Reedy River Cotton Mill,' under the presidency of Mr. James H. Maxwell.

" 'The Weaver mill was established and owned by Mr. John Weaver, a Northern man, who built it on a small creek, tributary of Tyger River, nineteen miles north of the then village of Greenville. This was successfully operated before



PACOLET MILLS.

and during the war by Mr. Weaver, and for several years after his death by his widow. Since her death the property has been sold or divided. and the old cotton yarn mill discontinued.

" 'The Batesville cotton mill was established by Mr. William Bates, a New England man, I suppose in about 1830. It was on the waters of Enoree River, ten miles east of Greenville. After changing owners several times it is still in successful operation with the distinction of having the only woman cotton mill president in the State—Mrs. M. P. Gridley.'

"The leading spirit in the development of cotton mills in the Piedmont section was D. E. Converse, who went to Bivingsville in February, 1855. The story of this Bivingsville development and of Mr. Converse is of enough interest and importance to command an entire chapter, but it would be impracticable to go into such detail, this historical sketch having already exceeded the limit set for this branch of my investigations.

"It might be mentioned that Bivingsville subsequently became Glendale, and is now the site of the D. E. Converse Company property. In 1849 Mr. Jas. Finger built the Fingerville plant, on North Pacolet River.

"The records of the time indicate that there was a cotton mill erected at Pendleton as early as 1828 and subsequently that there was a plant located there in 1838. The Rev. Wm. H. Mills, pastor of the Fort Hill Presbyterian Church, who is himself much interested, tells me that this 'Pendleton Factory,' which is located at Autun, near Pendleton, was begun March 1, 1838, and that it was built by Mr. B. F. Sloan, Thos. Sloan and Berry Benson.' Mr. Mills states that this mill made yarns and coarse and heavy cloth, weighing about one-half pound

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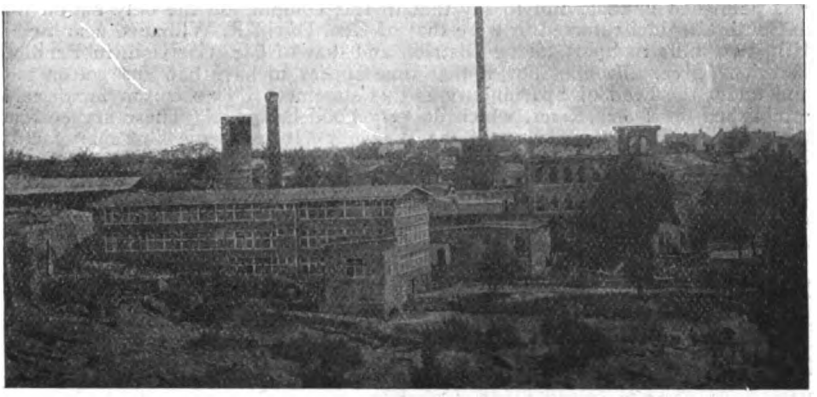


MILL, SCHOOL, AND OVERSEER'S AND OPERATIVES' HOUSES.

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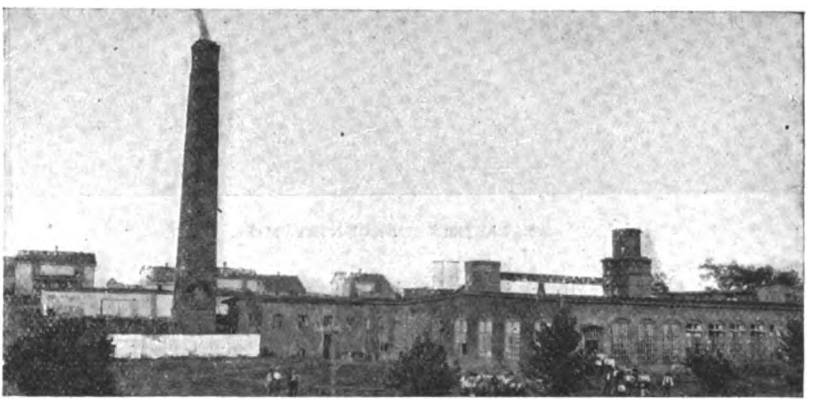
to the yard. It was capitalized at $50,000, and utilized white labor. It was run by water power, and it is altogether likely that Mr. Mills's claim that this is the oldest mill in the South, in continuous operation, is correct.

"The files of newspapers in the library of the University of South Carolina give many interesting side lights on the early history of cotton mills, and one of the most interesting articles refers to the plant of Gen. David R. Williams, who seems to have operated a successful cotton mill near Society Hill, in Darlington County, on the waters of Cedar Creek. In the Columbia *Telescope* of March 13, 1829, there occurs this timely editorial:



PELHAM MILLS.

"'In the advertising department will be found an advertisement of Gen. Williams on the subject of his cotton factory, from which it will be seen that it is now in operation. The large capital and the great intelligence and energy of Gen. Williams will make this a thorough experiment on the capacity of slave labor for manufacturing. If it shall be successful, and large capitals be invested in this way, we may expect an immediate repeal of the tariff. Our Northern brethren will no more consent to the competition of our manufactures than to



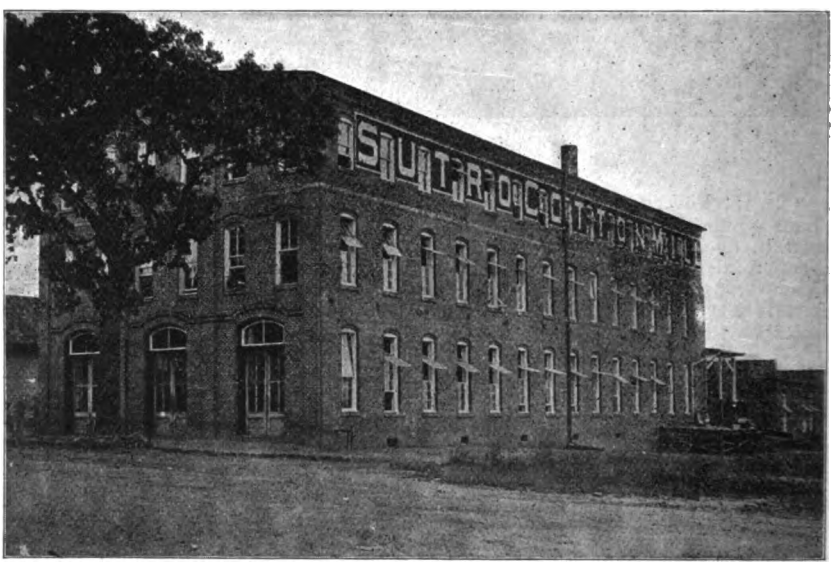
TYPE OF SMALL MILL.

that of Europe. We are well satisfied that whatever direction may be given to the capital and labor of the South, if it is successful, will be legislated upon for the advantage of the North without the slightest compunction for the injury it may bring us. This is the settled policy of the majority. In the meantime, however, we wish Gen. Williams all possible success in his spirited effort to develop the resources of the State; and besides the reward which a public-spirited exertion carries with it, we hope he will also realize (what he, we know, will regard as secondary to it) his prospects of individual emolument."

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"Later on, in May of 1829, there is a discussion as to the price of manufactured yarns, and some one, signing himself 'Consumer,' suggests that 25 cents per pound for Williams's cotton yarn was rather high, but the editor of the *Telescope* thinks that it is reasonable. In the *Telescope* of Friday, November 6, 1829, Gen. Williams publishes correspondence between himself and John Branch, Secretary of the Navy, the purport of which is that Mr. Williams suggests to the Secretary of the Navy the possible use of cotton rope in connection with the rigging of war vessels, and Mr. Branch promises to experiment with the samples of rope sent him by Gen. Williams.

"In closing this chapter it may be very well to refer to Mills's Statistics, which was published in 1826, and to say that in this compilation the only cotton mills in South Carolina referred to were that of Gen. David R. Williams, near Society Hill, two mills in Spartanburg District, and that of Mr. Garrison, in Pendleton District. Greenville does not at that time appear to have had any cotton mills, and under the head of Spartanburg is this statement: 'Two cotton factories are established on Tyger River, which do very good business.' These are evidently the plants built by the Hills and the Weavers. In the review of manufactures in Mills's Statistics for the State (1826) there were only four cotton mill plants recorded; but the various counties report that there was considerable cloth woven for local consumption. Under the head of manufactures in Georgetown there appears this significant report: 'The cultivation of rice and cotton in this district is too profitable to permit much attention to be given to manufactures.'



AN EASTERN UP-COUNTRY MILL.

"Marion District reports that 'labor is too valuable in raising cotton to be devoted to manufacturing it into cloth.'

"In the report from Sumter it is stated that: 'During the last war there was a cotton factory established in this district, which spun much cotton, but it declined after its termination.' So much for Mills.

"The Vaucluse Cotton Mill, which was incorporated in 1833, was one of the earliest successful ventures in South Carolina, and employed thirty white and twenty colored operatives, operating 1,500 spindles and twenty-five looms.

"In the Charleston *Mercury* of November 26, 1836, there is reprinted an article from the Edgefield *Advertiser* which deals with the details of the establishment of the Vaucluse Factory on Horse Creek in Aiken County. It states that the company was incorporated three years before, that the building was of fine granite, five stories high, 100 feet by 40 feet. At the time the article was written the factory had been in operation not quite two years, and one and one-half bales of cotton per day and a small proportion of wool was being consumed, the factory turning out from $250 to $300 per day. It was stated that at that time

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the advantage over the Northern mills was one and one-half cent per yard on heavy goods. The factory was operating with 30 white people and 20 negroes, it being ascertained that the negroes could not be successfully used for weaving, the factory at this date operating 1,500 spindles and 25 looms. The article concluded with the following remark: 'We know that there would be a general regret if this first effort of the kind, in our part of the country, should fail.'

"Another of the early ventures was that of the Fisher Bros., who erected the first mill in Richland County, at what is now Dent's Pond, which was at that time called Sand Brook. Subsequently this venture was abandoned, and the Saluda Factory, on the Lexington side of the river, which continued throughout the war, was later established and was operated largely by slave labor until the close of the war, when it was operated by white labor. Hammond, in his handbook, states that at the Saluda Factory, near Columbia, one white overseer was in charge of ninety negro slaves as operatives, and that these slaves were 'capable of learning within reasonable limits.'



THE FIRST LESSON IN SPINNING.

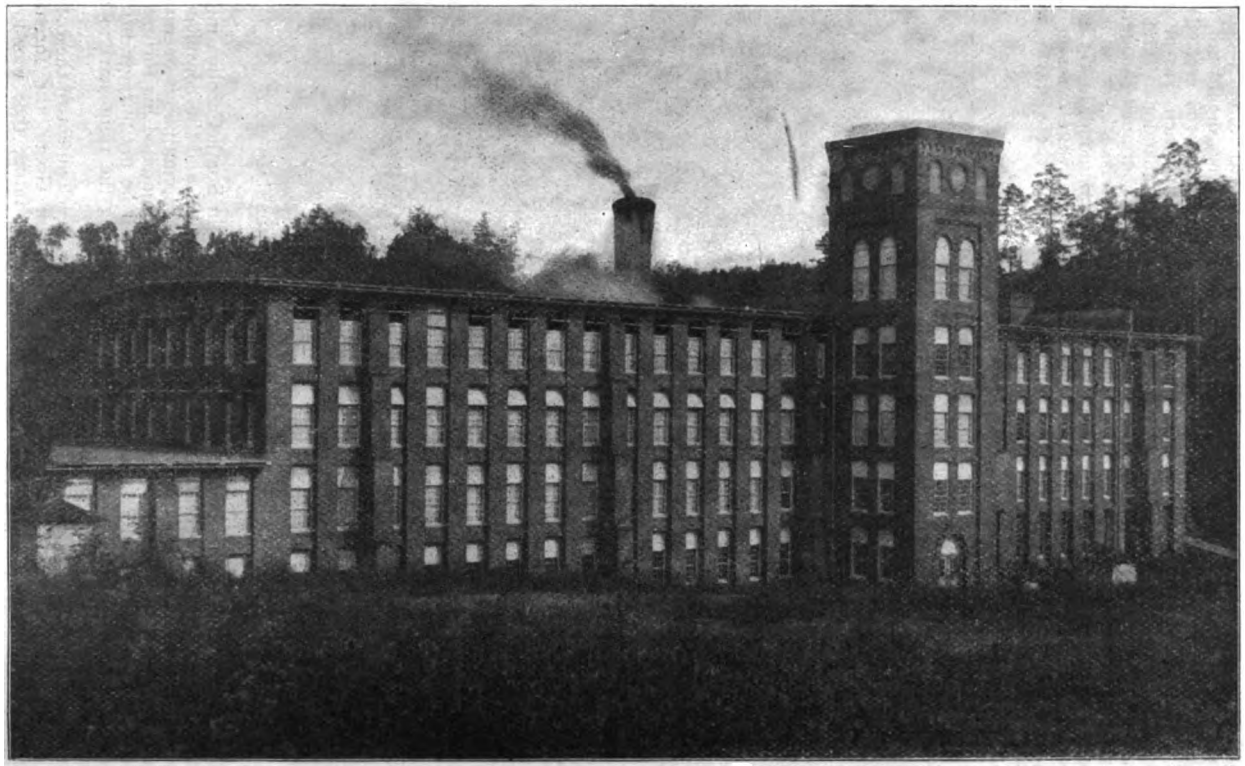
"The real and the lasting development of cotton mills in South Carolina might be started with the Graniteville Cotton Mill at Graniteville, and the conspicuous figure in the effort to establish this plant, which has been in continuous operation since 1847, was Mr. William Gregg, a merchant, who accumulated his fortune in the city of Charleston, and in a subsequent letter it shall be my purpose briefly to say something of him and what he did towards giving the right start to the cotton mill industry in this State."

Early Development.—Mr. Kohn has traced the early development of the cotton mills down to the period when the far-seeing William Gregg, the foremost Southern manufacturer of his day, predicted the great future that was to be realized for the cotton mill industry.

About this time the Saluda Cotton Factory, near Columbia, was operating 5,000 spindles and 120 looms on what has been known as brown shirtings and "Southern stripes," which was a kind of colored cloth used for servants' garments. At the same time there were in operation the DeKalb Mills, near Camden; the Vaucluse Mills, of which mention has already been made; the Mount Dearborn plant, on the Catawba River, and a yarn mill in Marlboro County.*

*See Index for Marlboro Manufacturing Company.

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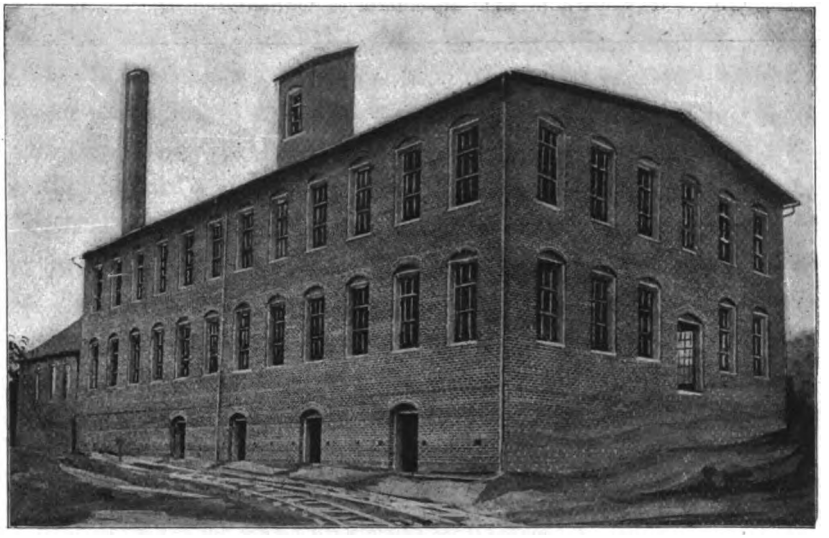
THE COURTENAY MANUFACTURING COMPANY'S PLANT AT NEWRY.

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At this same time there were two mills in course of construction in the city of Charleston. One of these mills in Charleston is recorded as having had 3,165 spindles and 100 looms, and it was operated by steam.

About 1850 a mill, known as the Arlington Mill, is recorded as having been started in Spartanburg County. It is still in operation. The Saluda Company was organized in 1832, and its great difficulty was the lack of sufficient capital. Mr. Gregg, in writing of the situation at Saluda, stated that it was capitalized at $50,000, and that the dam alone should have cost that much money, and that had a similar mill been built in the New England States at that time there would have been at least $400,000 capital in the treasury before anything was undertaken.

One of the most interesting pamphlets in connection with the early history of cotton mills is that of William Gregg, the founder of Graniteville, written in Charleston, January, 1845, and called "Essays on Domestic Industry." Another companion-piece is an essay by Mr. Gregg, entitled "An Enquiry into the Propriety of Granting Charters of Incorporation for Manufacturing and other Purposes in South Carolina." This pamphlet was originally issued under the *nom de plume* of "One Of The People." When it was issued in pamphlet form



AN UP-COUNTRY MILL.

Mr. Gregg put his name on the title page. It appears that up to this time the State was opposed to issuing charters to corporations as we now know them. In other words, for some time prior to the granting of the charter to the Graniteville Company, investors could not limit their liability by taking stock in corporations; but the idea was to secure individual responsibility or as copartners doing business, thereby involving full liability.

Mr. Gregg sought a charter for the Graniteville Company, and his series of letters showed the great advantages and possible development of cotton mills in this State. Mr. Gregg presented the argument with his accustomed force, and had secured valuable data in support of his positions. Capt. William A. Courtenay, who knew Mr. Gregg, tells me that the only reason that the charter was granted was because of the confidence that the leading men of the State had in Mr. Gregg, and because of his personal pledge that he would subscribe to at least one-half of the stock of the Graniteville Company.

A few years afterwards is found this reference to the fight for the charter of the Graniteville Company, which was granted. In the *Watchman*, of Sumterville, Mr. T. B. Fraser, one of the editors of the paper, in 1850, has this editorial: "On another column will be found the usual notice that an application will be made to our next Legislature for a cotton factory, to be situated in or near Sumterville. A few years since, when the application of the Graniteville Company was before the Legislature, so great was the prejudice against manufactures

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that it received a favorable report from the committee on manufactures—a committee of nine intelligent legislators of South Carolina—only by a majority of ONE vote. The Act of incorporation was, however, passed, and the result has been the establishment of the first factory in the Southern States, both as to the quality and quantity of the articles manufactured—and which is, perhaps, at this time, the most profitable investment in the State." The Sumter enterprise was heartily commended.

Mr. Gregg was really, in very many ways, a wonderful man, and if one today were to read his arguments and his reports he would be more convinced of this fact than ever. In his fifth annual report as president of the Graniteville corporation to his stockholders, which is republished in DeBow's Review for 1855, he lays down these five essential causes for the failure of the cotton mill industry in this State:

"The first is an injudicious selection of machinery, and of the kind of goods to be made.

"The second is a lack of steady, efficient and cheap motive power.

"The third is an injudicious location.

"The fourth is the lack of proper effort for the religious and moral training of the operatives.

"The fifth is to embark in such an enterprise without sufficient capital."



SHOOTING THE CHUTES AT THE MILL KINDERGARTEN.

Epoch Periods.—The epoch-marking periods in South Carolina in the cotton mill industry may be said to be 1847, when the Graniteville Company first put its goods on the market, and the early eighties, when Col. Hammett, Mr. Converse, Capt. John H. Montgomery, Capt. Ellison A. Smyth, Mr. John B. Cleveland and others began to see the possibilities of this industry, put their money into and began the extensive erection of cotton mills. The early efforts in South Carolina by such men as David R. Williams, William Bates, Hutchings, Gibbes and others were simply blazing the way to show the certainties of the industry.

In 1847 the *Telegraph,* of Columbia, devotes considerable space to an industrial review of the State, and gives the following statement of the then operating cotton mills:

"1. The De Kalb Cotton Factory, near Camden, doing a fine business.

"2. The Bivingsville Cotton Factory, near Spartanburg C. H., now the property of G. and E. C. Leitner—doing well.

"3. A new establishment now being erected by Dr. Biving, on a large scale—not yet in full operation—but, from the intelligence and energy of the proprietor, we have no doubt of his success.

"4. The Saluda Factory, near Columbia, which has been undergoing repairs during the summer, but now again in operation, has been doing a fine business for the last three years.

"5. The Vaucluse Factory, near Hamburg, under the management of Gen. James Jones, we understand is doing well.

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"6. The Graniteville Factory, near Aiken, lately established, and under the management of that intelligent and patriotic citizen, William Gregg, Esq. His name alone is a guarantee of the success of the establishment.

"7. The Fulton Factory, near Stateburg, under the management of Col. Dyson, an enterprising and meritorious gentleman, is doing well.

"8. The Mount Dearborn Factory, on the Catawba, lately put in operation, under the management of its enterprising proprietor, Daniel McCullough, Esq., is bound to succeed.

"9. The Marlboro Yarn Factory, owned by Messrs. Townsend and McQueen, and now leased to an enterprising, practical manufacturer from the North. In this factory we understand none but white operatives are employed, but we have not been informed of its success since it has fallen into the hands of its present lessee. For several years previous, under the management of M. Townsend, Esq., we believe it was doing well. The yarn manufactured at this establishment has been heretofore mostly contracted for at the North, and shipped and sold at a profit.*

"10. There is also a small factory at Society Hill, owned by Col. Williams, from which he supplies his own plantation, and those of the surrounding neighborhood, with a very superior article of cotton bagging. He also ships yarn to a Northern market.



MILL CHILDREN—A PRIMARY CLASS.

"11. There is, besides, an extensive establishment of this kind now in progress of construction near Charleston, from which we have reason to expect the best results, and several minor establishments in the back country, where water power, equal to any in the world, abounds."

It may also be interesting to note that a number of cotton mills survived the War between the States. In an almanac issued by Joseph Walker, of Charleston, in 1867, is found the following list of cotton mills in South Carolina then (1867) in operation:

"Batesville Manufacturing Company—Buena Vista, Greenville District, S. C. Runs 1,260 spindles, 36 looms, and employs 50 operatives. James Montgomery, superintendent.

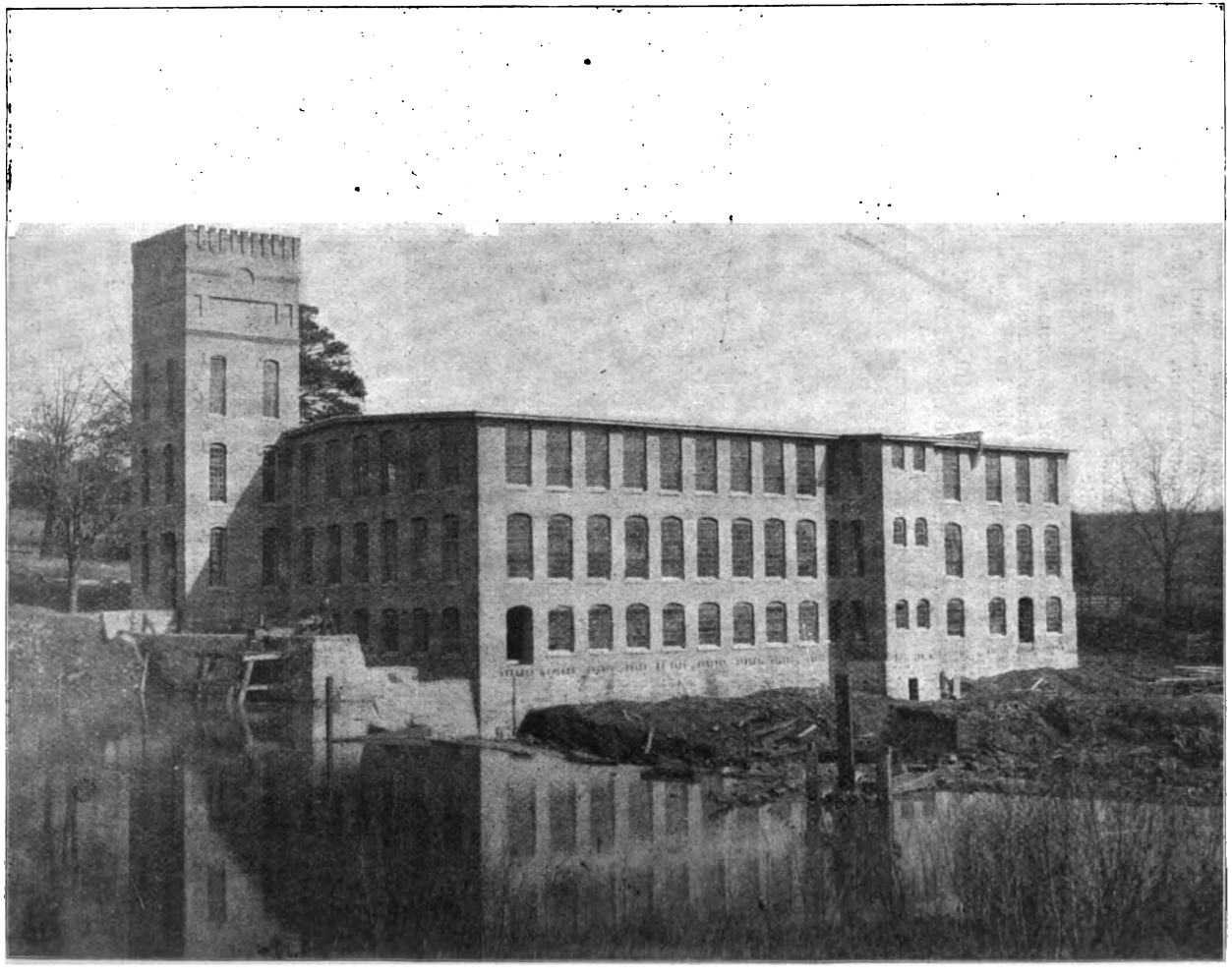
"Lester Cotton Factory—Buena Vista, Greenville District, S. C. Runs 840 spindles, employs 30 operatives. Capacity to be doubled in a few months.

"Graniteville Manufacturing Company—Graniteville, Edgefield District, S. C. Runs 10,000 spindles, 300 looms, employs 330 operatives. Wm. Gregg, Sr., president; Wm. Gregg, Jr., superintendent; H. H. Hickman, treasurer; J. H. Giles, secretary; Geo. Kelly, agent. The capacity of these mills to be doubled in three months.

"Kalmia Mills—Edgefield District, S. C., eight miles from Augusta, Ga. Runs 10,000 spindles, 600 looms, employs —— operatives. Benjamin F. Evans, president, Aiken, S. C.; E. J. Kerrison, treasurer; B. F. Mordecai, J. W. Grady.

*See Index for Marlboro Manufacturing Company.

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VALLEY FALLS MANUFACTURING COMPANY, 1848.

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Dr. J. J. Chisolm, directors. The Kalmia Paper Mills are under the same company.

"Lawson's Fork Factory—Five miles east of Spartanburg, S. C. Runs 1,600 spindles, 25 looms, 60 operatives.

"Valley Falls Factory—On Lawson's Fork, five miles north of Spartanburg, S. C. Runs 500 spindles.

"Fingerville Factory—On Pacolet River, 15 miles north of Spartanburg, S. C. Runs 500 spindles, 15 looms. Jos. Finger, general agent.

"Hill's Factory—On Tyger River, 18 miles south of Spartanburg, S. C. Runs 500 spindles. Jas. L. Hill, superintendent.

"Cedar Hill Factory—On South Tyger River, 18 miles northwest of Spartanburg, S. C. Runs 20 looms, 1,000 spindles. Lewis Green, superintendent.

"Crawfordville Factory—On Tyger River, eight miles west of Spartanburg, S. C. Runs 20 looms, 1,000 spindles. J. Bivings, manager.

"Barksdale Factory—On Enoree River, 20 miles south of Spartanburg, S. C. Runs 1,000 spindles, 50 operatives."

Getting down to modern times, and to the real beginning of the present-day success, I find that the *News and Courier* in 1880—27 years ago—printed the accompanying list of the cotton mills in South Carolina, together with their spindles and looms.

MILLS IN 1880.

Name.	Spindles.
1. Graniteville, Aiken	24,264
2. Camperdown, Greenville	12,840
3. Langley, Aiken	11,880
4. Piedmont, Greenville	10,624
5. Vaucluse, Aiken	10,000
6. Saluda, Lexington	7,000
7. Glendale, Spartanburg	5,000
8. Reedy River, Greenville	2,600
9. Fork Shoals, Greenville	2,000
10. Buena Vista, Greenville and Spartanburg	2,000
11. Red Bank, Lexington	1,936
12. Pendleton, Anderson	1,600
13. Batesville, Greenville	1,152
14. Fingerville, Spartanburg	1,000
15. Cedar Hill, Spartanburg	800
16. Valley Falls, Spartanburg	500
17. Crawfordville, Spartanburg	480
18. Westminster, Oconee	264
	95,938
Looms	1,933

"Today the list will be almost ten times as long, and the number of spindles, which is the basis of calculation for development, almost 400 times as great. There are today over 3,500,000 spindles in actual operation in South Carolina.

"The evolution of the cotton mills in South Carolina has been exceedingly slow; partly because of slave labor being regarded as more profitable when employed in growing cotton, and because white labor was not available to any extent for mill purposes; and for the further reason that the leaders of public thought were considerably prejudiced against manufacturing industries, and many of the intelligent people invested their money outside of the confines of the State.

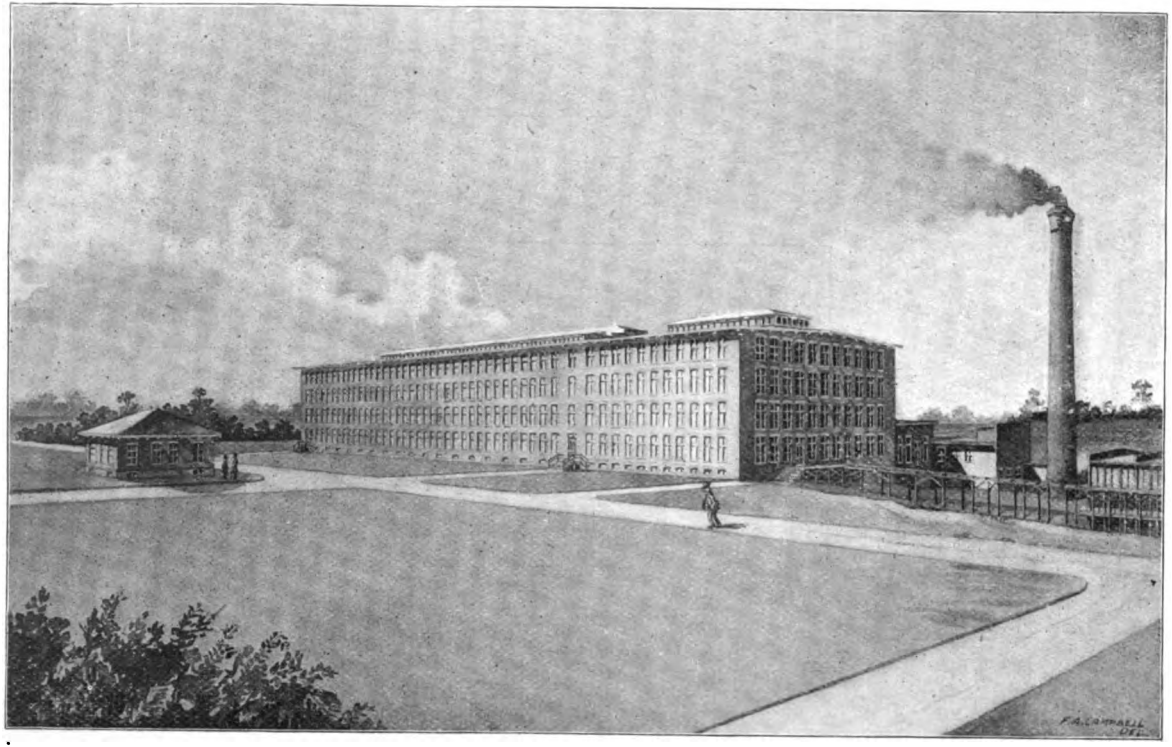
"The plodders who brought the development up to such a point that it could possibly be used as a basis for 'double-quick' movement after 1880 were such men as William Bates, the Weavers, and particularly William Gregg.

"The revolution, which has been defined as evolution on the 'double-quick,' began about 1880 in South Carolina, because of the general recognition that it was best 'to carry the mills to the fields,' because South Carolina was beginning to see daylight and accumulate some money after the trials of the war and reconstruction; because there was a better feeling on the part of the machinery and commission people of the North and East towards the South; and, finally, because some few Southern men, and particularly those in this State, had the 'nerve' to invest largely in cotton mills."

The Real Development.—Summarizing the development of the cotton mill industry as a whole in South Carolina, and showing the actual figures as to the rapid development referred to by Mr. Kohn, the following from one of the Federal Government reports is of much interest:

"South Carolina is entitled not only to the distinction of ranking first among the Southern States in the manufacture of cotton, but as being the first to undertake its manufacture. It is said that the historical records of the State

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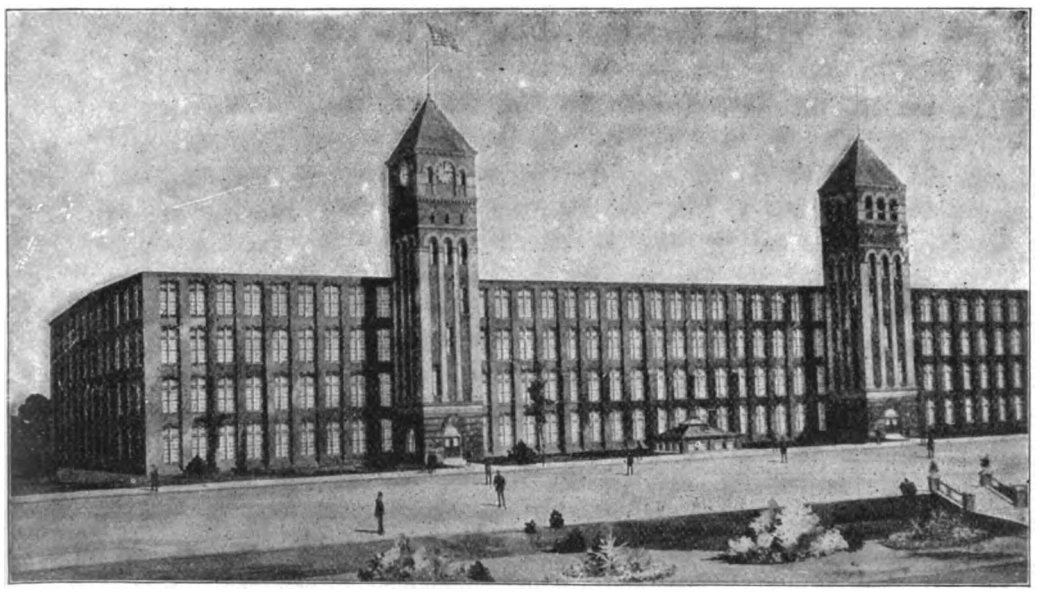


TYPE OF SOUTH CAROLINA MILL.

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contain an account of the building in 1787 of a small horse power mill on James Island, near Charleston, by Mrs. Ramage, the widow of a Carolina planter. In 1790 a factory, run by water power, was put in operation near Statesburg. In 1807 unusual interest was manifested in this branch of industry, and efforts were made to establish small factories and to introduce upon plantations the manufacture of cotton goods for negro wear and of cotton blankets. Two years later (1809) cotton goods were manufactured in Union District, and cotton blankets in Prince William District. About this time 'a factory for making check goods and handkerchiefs was established at Charleston, which turned out some very pretty goods.' According to a report of the Secretary of State, in 1824, three cotton yarn mills were incorporated under the State laws between the years 1800 and 1820, two of which were located in Greenville County and the other in Spartanburg County.

"In 1829 the second cotton mill in the State, run by other than horse power, was erected at Pendleton, and at Autun, in the same neighborhood, another such mill was built in 1838. In 1846 a mill was built at Graniteville. It was then the largest in the State and contained 8,400 spindles and 300 looms and made No. 14 yarns and 4-4 wide sheeting, 7-8 shirtings, and 7-8 twills.



OLYMPIA COTTON MILLS, COLUMBIA, S. C., LARGEST UNDER ONE ROOF IN THE WORLD.

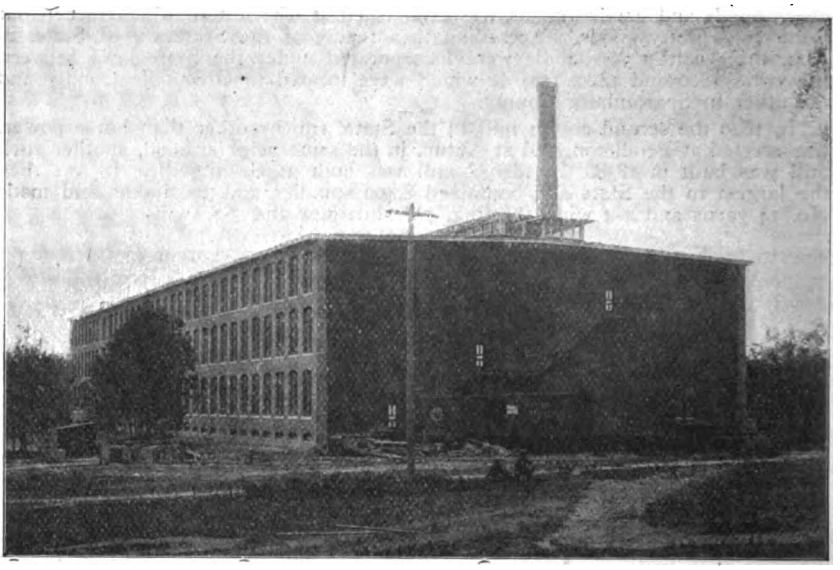
"In 1848, in addition to the above, though the date of their building is unknown, the following mills were in operation: The Saluda Cotton Factory, near Columbia (which employed all negro operators, except a white overseer, operated 5,000 spindles and 120 looms, and made heavy brown shirtings and Southern stripes—a coarse kind of colored goods for house servants); the De Kalb, near Camden; the Vaucluse, in Aiken County; the Mount Dearborn, on the Catawba River, in York County; a small mill at Society Hill, in Darlington County, and the Marlborough Yarn Mill.* Two other mills were in process of construction, one of which, at Charleston, having 3,165 spindles and 100 looms, and run by steam power, was put in operation in 1849. The following year (1850) a mill was built at Arlington, in Spartanburg County. So far as the records show, no new mills were built in the State from 1851 to the beginning of the Civil War.

"As to the consumption of cotton in South Carolina prior to 1840, little or nothing is known. The census of 1820 reported 588 spindles in operation and consuming 46,000 pounds of cotton, but the next census (1830) made no reports upon this industry. In 1840 there were 15 mills in the State, operating 16,355 spindles and consuming approximately 6,150 bales of cotton. The progress of the industry since 1850 is shown in the table on the next page.

*See Index for Marlboro Manufacturing Company.

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"It was not, however, until about 1884-85 that the cotton mill industry of the State began its remarkable development. The next census (1890) was a surprising revelation, showing that in ten years the number of mills had more than doubled, the number of spindles more than quadrupled, and that the amount of cotton consumed was very little short of four times as great. The progress of the industry since 1890 is even more wonderful, the number of mills having increased from 34 to 136, the number of spindles from 332,784 to 2,479,521, or



BELTON MILLS.

645 per cent., and the number of bales consumed from 133,342 to 587,126, or 340 per cent. It will be noticed that the per cent. of the crop consumed increased from 17.8 in 1890 to 63.4 in 1902-1903."

CONSUMPTION AND PRODUCTION OF COTTON IN SOUTH CAROLINA, 1850-1903.

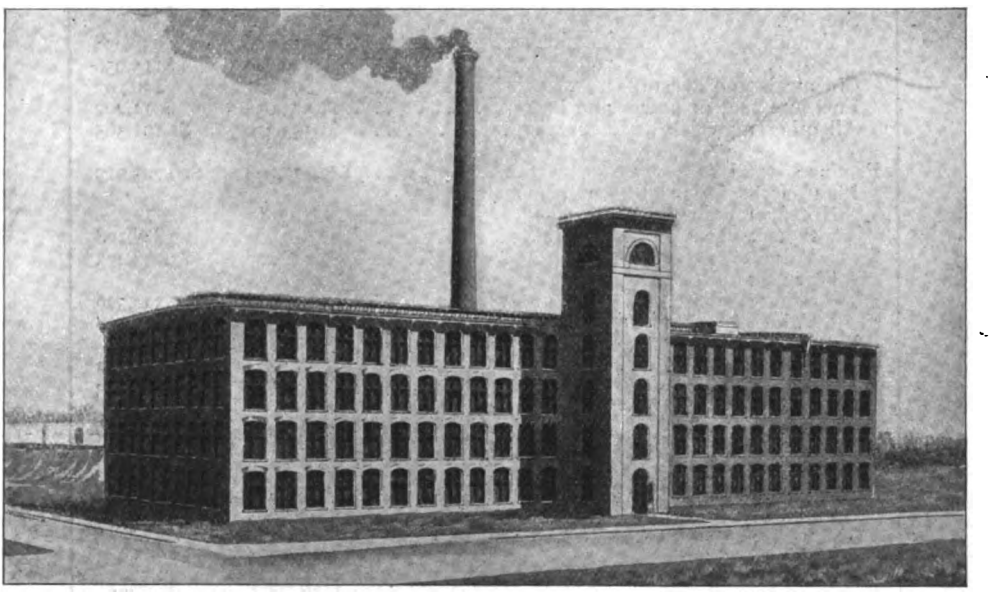
Year.	No. of mills.	No. of spindles.	No. of bales consumed.	No. of bales produced.	Per ct. of crop used.
1849-50.	18	36,500	9,929	300,901	3.3
1859-60.	17	30,890	8,648	353,412	2.4
1869-70.	12	34,940	10,811	224,500	4.8
1874-75.	18	70,282	19,945	360,000	5.5
1879-80.	14	82,424	33,624	522,548	6.4
1884-85.	31	217,761	77,451	511,800	15.1
1889-90.	34	332,784	133,342	747,190	17.8
1890-91.	44	415,158	164,814	859,000	19.2
1891-92.	47	467,825	183,625	780,000	23.5
1892-93.	51	503,269	200,219	635,000	31.5
1893-94.	50	569,033	215,228	650,000	33.1
1894-95.	48	619,849	229,580	862,604	26.6
1895-96.	58	802,854	257,700	764,700	33.7
1896-97.	73	1,056,198	297,782	936,463	31.8
1897-98.	76	1,205,272	398,456	1,030,085	38.7
1898-99.	80	1,285,328	466,181	1,035,414	45.0
1899-1900.	93	1,693,649	489,559	830,714	59.9
1900-1901.	115	1,908,692	501,290	743,294	67.4
1901-1902.	127	2,246,926	607,906	843,660	72.1
1902-1903.	136	2,479,521	587,126	925,490	63.4

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From 1900 to 1905.—More substantial and real, but without such large percentages of increase, has been the development for the half-decade between 1900 and 1905—109.7 per cent. in capital against 252.4 per cent. for the period between 1890 and 1900, and 301.3 per cent. for the decade between 1880 and 1890, with proportionate increases in the number of wage-earners, cost of materials used and value of products. The United States census of manufactures (Bulletin 39) thus summarizes the status of this period, the figures to some extent being slightly, but not materially, at variance with the other Federal figures quoted above. Table A shows the class of goods being manufactured, which is a fair index for 1907, though, as Mr. Kohn indicates, the tendency is to the manufacture of finer goods.

What follows to the 1905-1907 period is from the reports:

"As shown in Table 10, the manufacture of cotton goods was by far the most important industry at the censuses of 1900 and 1905. In 1905 this industry represented 72.6 per cent. of the capital, 62.7 per cent. of the average number of wage-earners, 55.5 per cent. of the wages paid, and 62.3 per cent. of the value



MILLS MANUFACTURING COMPANY, GREENVILLE.

of products for the whole State. The number of establishments increased from 80 in 1900 to 127 in 1905, while the capital increased $43,078,483, or 109.7 per cent.; the number of wage-earners, 7,070, or 23.4 per cent.; the wages paid, $2,634,849, or 52 per cent.; and the value of products, $19,713,725, or 66.3 per cent. The number of producing spindles was 1,431,349 in 1900 and 2,864,092 in 1905, an increase of slightly more than 100 per cent. The number of looms also showed a large gain, the increase being from 42,663 to 72,702, or 70.4 per cent. This machinery does not represent the capacity of the cotton mills of the State, as returns were received from idle mills reporting 65,400 spindles and 1,678 looms. In the manufacture of cotton in the United States, measured by value of products and number of producing spindles, South Carolina held second rank at the census of 1905.

"Table A shows the kind, quantity and cost of the materials used in the cotton goods industry, and the kind, quantity and value of the products for 1900 and 1905.

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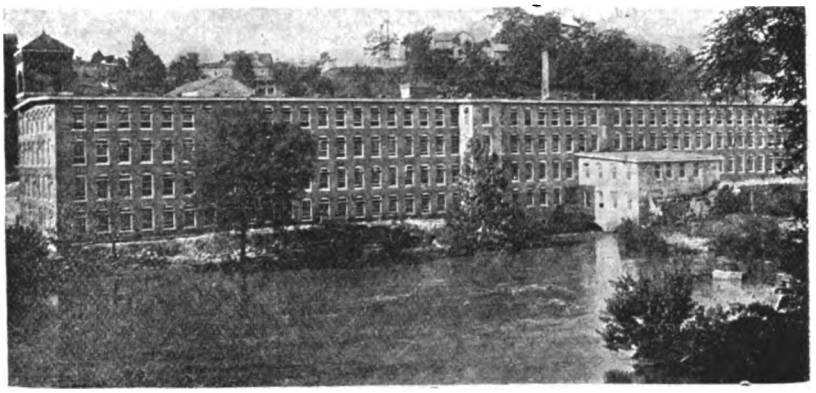
TABLE A.—COTTON GOODS—MATERIALS USED, BY KIND, QUANTITY AND COST; AND PRODUCTS, BY KIND, QUANTITY AND VALUE: 1905 AND 1900.

	1905.	1900.
Materials used, total cost	$34,308,311	$17,263,882
Cotton:		
Domestic—		
Bales	555,467	485,024
Pounds	269,045,002	229,899,760
Cost	$30,451,159	$14,909,520
Egyptian and other foreign—		
Bales	2,633	210
Pounds	1,912,459	154,047
Cost	$318,020	$20,026
Yarns not made in mill:		
Cotton—		
Pounds	636,300	2,866,925
Cost	$110,055	$365,106
Starch:		
Pounds	8,334,606	6,038,638
Cost	$209,646	$115,956
Chemicals and dyestuffs	$93,007	$50,707
Fuel and rent of power and heat	$1,573,054	$611,202
All other materials	$1,553,370	$1,191,365
Products, total value	$49,437,644	$29,723,919
Plain cloths for printing or converting:		
Not finer than No. 28 warp—		
Square yards	81,640,762	77,848,108
Value	$3,418,227	$3,034,475
Finer than No. 28 warp—		
Square yards	332,850,981	97,343,526
Value	$14,007,496	$3,171,198
Brown or bleached sheetings and shirtings:		
Square yards	248,777,474	283,105,383
Value	$12,035,854	$11,553,073
Twills and sateens:		
Square yards	45,220,488	11,379,712
Value	$2,175,651	$485,484
Fancy woven fabrics:		
Square yards	17,781,844	213,068
Value	$975,998	$14,000
Ginghams:		
Square yards	26,212,195	16,752,808
Value	$1,376,908	$806,551
Duck:		
Square yards	5,729,546	7,236,154
Value	$1,245,094	$981,989
Drills:		
Square yards	88,551,799	116,467,224
Value	$5,344,146	$5,375,017
Ticks, denims, and stripes:		
Square yards	6,533,888	1,802,138
Value	$444,977	$139,131
Bags and bagging:		
Square yards	14,250,913	229,109
Value	$683,877	$20,984
Yarns for sale:		
Pounds	31,645,397	24,859,616
Value	$6,217,795	$3,461,090
Waste for sale:		
Pounds	24,199,029	25,582,434
Value	$367,273	$433,086
All other products	$644,348	$246,941

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"There were 555,467 bales of domestic cotton used in 1905, as compared with 485,024 bales in 1900, an increase of 70,443, or 14.5 per cent., while the amount paid for this class of cotton increased $15,541,639, or 104.2 per cent. During the same period the foreign cotton used increased 2,423 bales, or more than eleven-fold, while the amount paid for this class of cotton increased $297,994, or almost fifteen-fold. The mills purchased less yarn in 1905 than in 1900 by 2,230,625 pounds, this amount being a decrease of 77.8 per cent.

"Plain cloths for printing or converting, of a quality finer than No. 28 warp, constituted the principal product in 1905. This production increased from 97,343,526 square yards, valued at $3,171,198 in 1900 to 332,850,981 square yards, valued at $14,007,496 in 1905, an increase of 235,507,455 square yards, or 241.9 per cent., in quantity, and $10,836,298, or 341.7 per cent., in value. Brown or bleached sheetings and shirtings, which formed the principal products in 1900, were second in importance in 1905; this product increased 34,327,909 square yards, or 12.1 per cent., in quantity, but increased $482,781, or 4.2 per cent., in value. The product third in importance in 1905 was yarn made for sale; this increased 6,785,781 pounds, or 27.3 per cent., in quantity, and $2,756,705, or 79.6 per cent., in value. In the manufacture of drills there was a decrease of 27,915,425 square yards, or 24 per cent., in quantity, accompanied by a decrease of $30,871, or only six-tenths of 1 per cent., in value. There was a remarkable increase in the production of fancy woven fabrics, the quantity increasing from 213,068 square yards in 1900 to 17,781,844 square yards in 1905, while the value increased from $14,000 to $975,998. Other marked increases occurred in both



A SPARTANBURG PLANT.

the quantity and value of bags and bagging, twills and sateens, and ticks, denims and stripes.

"Table B shows certain leading details of the industry at the several censuses from 1870 to 1905 with the percentages of increase.

"The phenomenal growth of cotton manufactures in the State from 1870 to 1905 is presented in Table B. The capital invested, which amounted to $1,337,000 in 1870, was $82,337,429 in 1905. During this period of thirty-five years the number of wage-earners increased from 1,123 to 37,271 and the value of products from $1,529,937 to $49,437,644. The number of wage-earners employed in the cotton mills formed 13.8 per cent. of the number for all industries in the State in 1870 and had increased to 62.7 per cent. of the total in 1905, while the products which formed 15.5 per cent. of the value of all products in 1870 formed 62.3 per cent. in 1905. In the number of producing spindles there was an increase from 1870 to 1905 of 2,829,152, or over eighty-fold. In 1870 the cotton mills were operated entirely by water power, a total of 955 horse power being reported at that census, while at the census of 1905 a total of 156,117 horse power was reported, composed of steam, 96,842; electric, 29,707; and water, 29,568. Of the total power used in manufacturing industries in the State, the cotton mills reported 6.4 per cent. in 1870 and 70.6 per cent. in 1905.

"The extent of the growth of cotton manufacturing in South Carolina may perhaps be better understood when the statistics relating to the employment of labor are considered.

"Table C shows the average number of wage-earners engaged in the industry —men, women and children—at the censuses from 1870 to 1905, the percentages of increase, and the percentages of the total for the several classes."

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TABLE B.—COTTON MANUFACTURES—COMPARATIVE SUMMARY WITH PER CENT. OF INCREASE: 1870 TO 1905.

CENSUS.	Capital.		Wage-earners.		Wages.		Cost of Materials Used.		Value of Products.	
	Amount.	Per cent. of increase.	Avg. No.	Per cent. of increase.	Amount.	Per cent. of increase.	Amount.	Per cent. of increase.	Amount.	Per cent. of increase.
1905	$82,337,429	109.7	37,271	23.4	$7,701,689	52.0	$34,308,311	98.7	$49,437,644	66.3
1900	39,258,946	252.4	30,201	274.2	5,066,840	235.4	17,263,882	153.2	29,723,919	203.3
1890	11,141,833	301.3	8,071	293.1	1,510,494	296.6	6,819,320	277.1	9,800,798	238.5
1880	2,776,100	107.6	2,053	82.8	380,844	47.8	1,808,300	137.5	2,895,769	89.3
1870	1,337,000	.....	1,123	.....	257,680	.....	761,469	.....	1,529,937	.....

TABLE C.—COTTON GOODS—COMPARATIVE SUMMARY, WAGE-EARNERS, WITH PER CENT. OF INCREASE AND PER CENT. OF TOTAL: 1870 TO 1905.

	1905.		1900.		1890.		1880.		1870.
	Avg. No.	Per cent. of increase.	Avg. No.	Per cent. of increase.	Avg. No.	Per cent. of increase.	Avg. No.	Per cent. of increase.	Average number.
Total	37,271	23.4	30,201	274.2	8,071	293.1	2,053	82.8	1,123
Men sixteen years and over	18,279	36.2	13,418	371.0	2,849	309.3	696	149.8	289
Per cent. of total	49.0	.....	44.4	.....	35.3	.....	33.9	.....	25.7
Women sixteen years and over	10,157	17.1	8,673	182.5	3,070	297.7	772	52.0	508
Per cent. of total	27.3	.....	28.7	.....	38.0	.....	37.6	.....	45.3
Children under sixteen years	8,835	8.9	8,110	276.9	2,152	267.9	585	79.4	326
Per cent. of total	23.7	.....	26.9	.....	26.7	.....	28.5	.....	29.0

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From 1905 to 1907.—This has been an equally remarkable period of the history of cotton manufacturing, as will be seen by the accompanying figures, and it is the more noteworthy because of the general demand for labor. The figures for 1907 are from the census made during that year by the State Department of Agriculture, Commerce and Immigration, in accordance with the provisions of the Act creating the Department. Here is the summary:

STATUS OF COTTON MILL INDUSTRY, 1905-1907.

	1905.	1908 (to Aug. 1)	1907	Per ct. of Increase 1905-07
Capital	$82,337,429	$105,826,919	$103,821,919	26
Value of products	49,437,644	77,010,419	75,455,019	52
Cost of material	34,308,311	.....	.....	..
No. of wage-earners	37,271	56,223	54,887	47

The State census of the textile industry includes hosiery and yarn mills, and, in fact, every plant that relates in any way whatsoever to cotton manufacturing. There is a marked increase in the two-year period in the number of corporations



A MILL VILLAGE SCHOOL.

and plants as well as in capital, value of products and number of wage-earners.

Children.—The most valuable and interesting, indeed most gratifying, showing made by the summary table is in the number of children under sixteen years of age. In 1900 there were 8,110 such children working in the cotton mill plants, and these had increased in 1905 to 8,835, while in 1907, owing in part to the operation of the child labor law and in part to the general desire of manufacturers not to employ children when possible, the number had decreased to 8,121, only eleven more than the smaller number of mills had seven years before. All this is fully shown in the table herewith, showing the summary of the industry from 1840 to date.

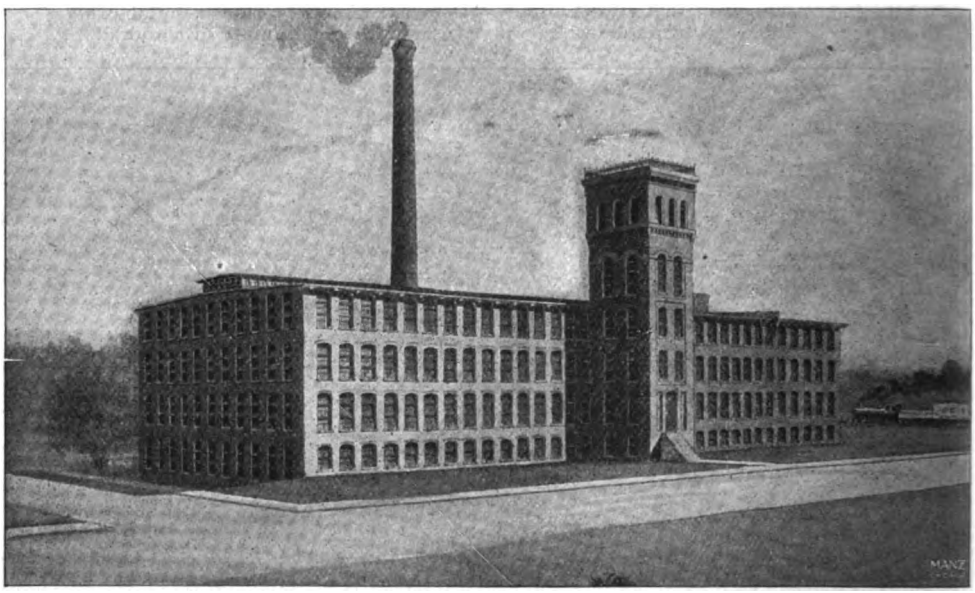
The Future.—So much for the statistical side of the industry, viewed from the standpoint of what has been accomplished. As to the future, no man can safely predict how far the wisdom of the policy of bringing the cotton factory to the cotton field will go. It is certain that the limit in South Carolina has not been reached, when it is taken into consideration that at this moment many enlargements are being made and as many more are contemplated by existing mills, and that over $3,000,000 additional capital is at this time involved in building

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and contemplated new textile plants. Indeed, it looks as if there is to be a most marked further advance in the next half decade.

The Labor in the cotton mills of South Carolina was, as in the case of Massachusetts, at first all drawn from the fields of the State. As the industry grew the mills reached out and brought in people from the mountains of North Carolina, Tennessee and Georgia. There are but very few people of foreign birth in the mill villages; more, perhaps, since the experiment of 1906-7 than at any other period of the history of the industry. In the case of the mountain families referred to, these people, when the conditions surrounding their home life prior to coming to the mills are considered, are infinitely better off than they were before.

Welfare Work.—Throughout the State it has been the effort, notably in several localities such as Pelzer and Greenville, to conduct welfare work of real value, looking to the amelioration of the lot of the operatives, and a great deal has been accomplished. Thos. F. Parker, of Greenville, and Capt. E. A. Smyth have been praiseworthy pioneers in this regard. What has been done in all parts of the State has been fully told by August Kohn and also by Miss Gertrude Beeks,



A TYPICAL MILL.

who was sent to South Carolina to investigate these conditions by the National Civic Federation. Miss Beeks' report was interesting and valuable, and it is with her permission that many of the "welfare work" illustrations, which tell their own story, are reproduced herewith. Miss Beeks says:

"Before going into the cotton mill communities the operatives could not be reached by civilizing influences. Through the welfare work of the cotton manufacturers the children of Americans of Revolutionary ancestry, largely Tories, have been given the benefits which make for the best citizenship. Through the humane instincts of the mill owners educational opportunities have been secured to them. These men have either assumed the function of the State by providing educational facilities or have been instrumental in securing legislation for school purposes whereby they are the largest taxpayers. Kindergartens and schools are supported in whole or in part by *all*. The public school system in the South is still in an imperfect condition, and, furthermore, State appropriations are insufficient to maintain the schools longer than four months in each year. In one village where the population is 5,000, 2,200 being operatives, 750 children are being educated at the present time by the mill owner. The salaries paid annually to the twelve instructors, including the welfare worker and domestic science teacher who assists her, amount to $7,000. In some other villages the mill owners pay the greatest amount of taxes to support the schools for the regular term of four months, and then, in addition, maintain them entirely at their own expense for an additional four months. In South Carolina one-half of the three-mill tax for education is applied toward schools for negroes, although they do not pay one-half of the taxes. The colored parents send their children to school more generally than the

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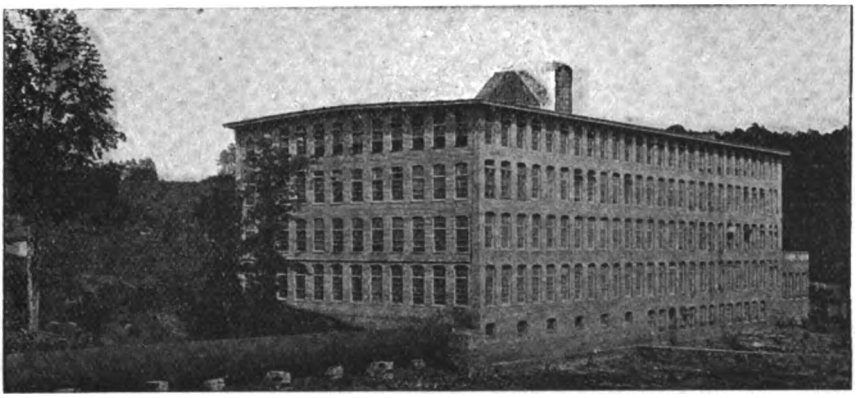
white people, partly because they are more ambitious for them and partly because there is small opportunity of securing work for colored children. The employers erect the school buildings in the majority of the villages, as well as the homes for the teachers. The elevating influence of a new kindergarten was illustrated by the good care given the modern conveniences installed in it."

Miss Beeks treats of the libraries, the efforts made to provide recreation, the hours of work, and the child labor conditions, and then remarks:

"On observing the general prosperity which has been wrought through the cotton industry, the question arose as to *whether it would have been better to have left the people in pauperism and illiteracy* than to have taken them into the manufacturing districts where they could secure an industrial training *with pay* which would insure a livelihood, be uplifted by the elevating influences and secure an education for the majority of their children."

She earnestly advocates compulsory education, in concluding her treatment of the child labor question, and showing how it is to some extent affected by the shortage of labor. She concludes her entire study with these remarks:

"The legislation needed in South Carolina is: Compulsory education, with provision for truant officers; factory inspection, to strengthen the child labor law; amendment of the child labor law, to increase the age limit from twelve to fourteen years; birth registration; and marriage license law. With the exception of the last two subjects



TUCAPAU MILLS.

listed, the requirements are the same in Alabama, and in Georgia even the child labor law is yet to be secured. For the present the cotton mills are industrial training schools as well as refuges for the unfortunates. Too much praise cannot be given to the mill owners who, in spite of the unfair criticism which has been made, are not only giving food and shelter and an industrial training to the illiterate descendants of the first inhabitants of the colonies, but, through their welfare work, are a great civilizing influence and are steadily raising the standard of citizenship."

From a Mill President.—Before reverting to Mr. Kohn's conclusions, the most recent utterance on this general subject, a brief article appearing recently in the *Textile Manufacturers' Journal*, written by Thos. F. Parker, president of Monaghan Mills, who has done so much for the operatives, is given as indicative of the ideas of the advanced type of cotton mill president:

"The first big welfare work of the South Carolina cotton mills was gathering around the mills in villages from isolated farms, backwoods and mountain regions more than 125,000 destitute people, and in building up financially many communities of the State. This work has taken twenty-five years. During all of this period these people were given, for the first time in their lives, steady employment, good wages, accessible churches, schools and social advantages. At the same time the cotton mills doubled and trebled the value of real estate in the adjoining communities. Over $100,000,000 are invested in cotton mills, which is over 70 per cent. of all the manufacturing capital of the State. Cotton mill payrolls exceed $12,000,000 per annum; their State and municipal taxes are over $500,000 per annum, and as 75 per cent. of their capital stock is now owned in South Carolina, most of their profits are kept at home. They consume over 70 per cent. of the cotton produced by the State, and with operatives who formerly could not find work is now producing a manufactured product of nearly $75,000,000 per annum. As the cotton mills draw their operatives from the farms, they increase the wages of farm labor at the same time as they do those of their operatives, which has been 40 per cent. in the last five years. Their successful efforts

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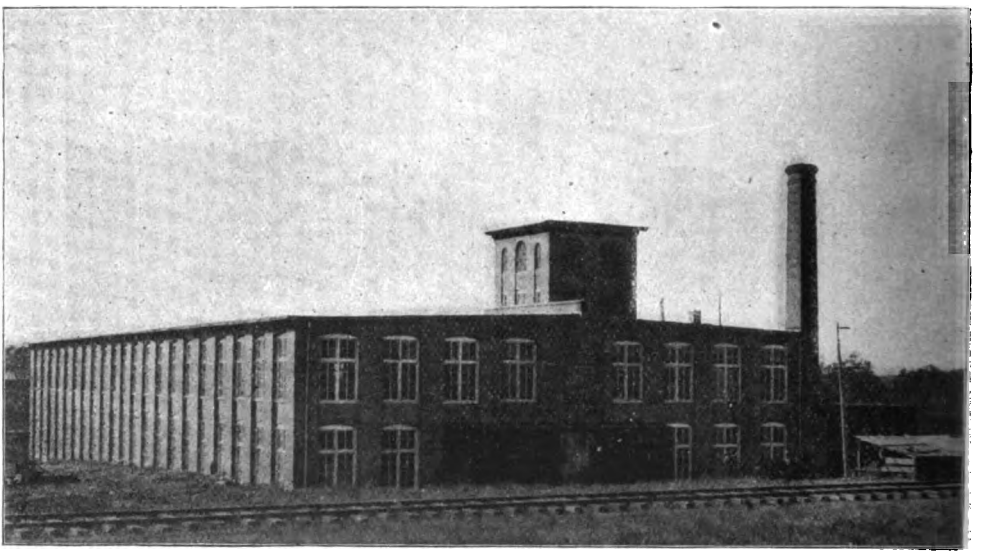
have raised the wages of their operatives by degrees till they are now on a parity with those of any other section of the United States.

"These are some of the things that the cotton mills have done, and they stand without a rival as the chief makers of South Carolina's present financial prosperity, with all that that means to the welfare of that commonwealth.

"When these 125,000 people came to the mills they were practically all working in the fields from 'sun-up to sun-down,' and doing their housekeeping and stock-feeding at night, and suffering from privation both day and night. They were most thankful to receive, till within fifteen or ten years ago, for these hours 25 cents per day for children, 50 cents for women, and 75 cents for men. Their hours have been steadily reduced and their wages advanced till on January 1, 1908, their mill day will be ten hours and their wages be on a fair average, 75 cents for children under sixteen, $1 for women, and $1.50 for men (some weavers earn over $2).

"The laws now also provide that, with a few exceptions, children under twelve shall not work, and regulate night work. These laws, which protect those mills that endeavor to care for their operatives and the future citizens of the State, make another distinct phase of welfare work. In addition to the laws enacted, there are similar laws which the representative mill men are advocating, and which are very important, such as a law for compulsory education, marriage licenses, and the registration of births and deaths. There is also another proposed law which should receive attention, prohibiting the marriage of children, which are frequent in mill communities.

"South Carolina has very sanitary mill buildings and mill villages. It is almost a universal rule that each mill owns its village and furnishes every family a neat, comfortable four-room or six-room house with a flower and vegetable garden, cow pasture (and sometimes cow sheds and other accessories), for the low rental of from three to four dollars per month for a four-room house. Each village has fair school and church



PALMETTO COTTON MILLS.

opportunities and a hall for secret orders, the mill company contributing whatever is necessary in addition to what others pay for buildings or salaries to provide these.

"A number of mill companies during the last few years have been erecting at their own expense, in their villages, club houses, hospitals, swimming pools and handsome school and church buildings. The most expensive of these cost $25,000; another cost $18,500. In the various South Carolina mills there are, perhaps, fifty such mill buildings for the operatives, paid for entirely by the companies at a cost of from $5,000 to $10,000 each. There are now between ten and fifteen salaried welfare workers (not including school teachers and ministers), with salaries from $500 to $1,000 each, in South Carolina mill villages, paid entirely by the companies.

"The object of South Carolina mills is to make money for their stockholders, and they have received the equivalent in labor for the wages they have paid; their salaries and dividends and undivided profits have been handsome. The good accomplished other than to stockholders and officers, though largely incidental, is none the less actual. Some mill managements believe that it pays a corporation to make reasonable expenditures to produce a higher class of operatives loyal to the corporation, and that best results in the long run for the corporation are so obtained; these managements have what are known as the 'show mills' of South Carolina. Some also feel that the mills have duties to their operatives besides paying their price in the labor market.

"Then there are those mills at the other extreme which believe in immediate returns, and in not 'spoiling the operatives' or 'pampering them by paternalism.' The latter do not like to be mentioned in such an article as this, and prefer in such matters that others represent their State. In South Carolina this latter class is in the minority, and despite the articles of 'yellow journalism,' the average South Carolina mill, taking into account everything connected with the management and the plant, is unquestionably the equal of the average cotton mill of any State in our nation."

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Recent Investigations.—Mr. Kohn's remarks on "The General Scope of Welfare Work" are worthy of reproduction. He writes:

"Perhaps the most notable development in the cotton mills has been what is known as 'Welfare Work.' This phrase is probably of recent coinage, and it may not be altogether understood, particularly as there is such a general and unfortunate misunderstanding as to what cotton mills are really doing both in an industrial and in a beneficial way. The farmers and small land owners have a very keen appreciation of how the cotton mills have helped them by creating markets and increasing demands for their cotton, and truck, eggs and poultry; but the people generally, not only those outside of South Carolina, but our own people, because of their lack of information and because they do not themselves go into the subject, do not appreciate in the smallest degree the great good that the cotton mills have done in this State as civilizing influences, and are planning to do.

"It seems to have been taken as a matter of course that the cotton mills should have spent hundred and hundreds of thousands of dollars to educate the children in their mill communities, and it seems now to be taken as a matter of course that they should be spending money with a lavish hand for the building of libraries, lyceums, bowling alleys, churches, and even swimming pools. The new field has been entered with perfect willingness by the cotton mill presidents. There has been no compulsion, and there never has been any agreement with the employees, through any channel, that the cotton mills should spend thousands of dollars for the building of churches or school houses, and now places of amusement, for their help. The custom has simply grown of its own accord, and is an absolutely voluntary offering on the part of the cotton mill officials, who have determined of their own accord to share largely with



OPERATIVES' FOURTH OF JULY CELEBRATION.

their employees whatever measure of prosperity they have enjoyed. It is, therefore, all the more to be commended. If any one should go to the mill community and talk to the people, and go into the very heart of the situation, he would find a very much keener appreciation of what the schools and churches and libraries have done for these one hundred and twenty-five thousand people who have gone to the mill communities, than they would imagine without carefully inquiring into the situation. The operatives are, as a rule, an appreciative class, and that, in my opinion, largely accounts for the liberal and increasing expenditures for what is known as 'Welfare Work.' Too much of it cannot well be done, and stockholders will have to forego dividends and instead see this 'Welfare Work' progress.

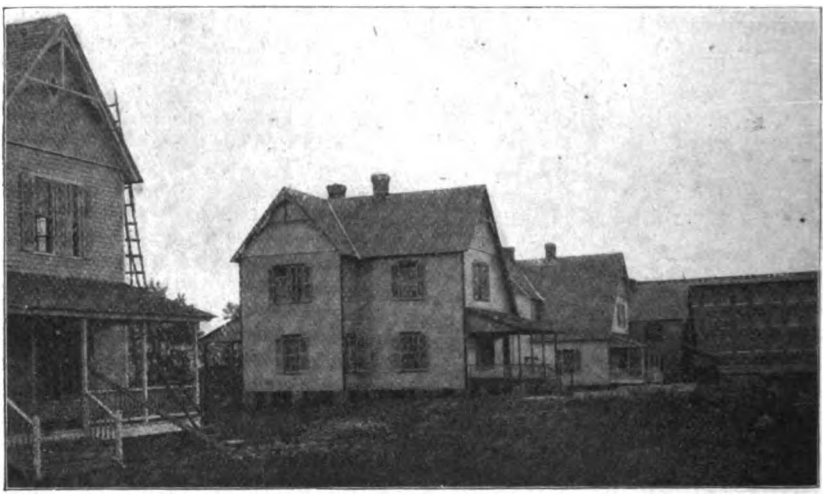
"There are various and increasing means of doing this work, and it has to be done with some degree of care, economy and delicacy, so that it will not be hurtful. It is not regarded by the operatives, and less so by the officials, as a charity, and even charity can go amiss by being undertaken without system. It is a very difficult matter—in fact, I might say it is impossible—to give any adequate idea of the volume of 'Welfare Work' undertaken by the cotton mills of this State. Some of them are doing it on a very much more extensive scale than others, while many are spending a very liberal portion of their earnings in this work, and feel it is a very good investment; others spending nothing whatever. The fact of the matter is that there is some disagreement, of rather an argumentative nature than otherwise, as to whether the cotton mills should undertake the 'Welfare Work' upon the intensive plan that some of the cotton mill officials advise. The most pronounced and strongest advocate, and one whose actions follow in line with his words, in this new development of 'Welfare Work,' is Mr. Thos. F. Parker, president of the Monaghan Cotton Mills, of Greenville. He not only advises the spending of corporation money for such work, but he and his family have been lavish in the expenditure of their personal funds. Capt. Smyth has also done a great deal of 'Welfare Work' in a business-like way and is one of the

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pioneers. Another of this school is Mr. Hamilton Carhart, who has recently invested in this State, and has a new plant at Rock Hill. From Mr. Parker on down there are various views on this subject of how far the mill corporation should go into the matter of providing amusements and pleasures for the help, and to what degree operatives should depend for such pleasure upon their own initiative. In one mill community I had a talk with one of the most kind-hearted and successful cotton mill presidents. He told me that he was firmly convinced that the operatives had an idea that the money that was spent on 'Welfare Work' by the corporations was subtracted from their pay envelopes, and that the operatives themselves would rather have the money go directly into their pay envelopes than into the amusement halls and entertainments, and his view was that whatever work of this kind was done for mill operatives should be of a personal nature, so that whenever the hat is passed around for subscriptions his name is certain to appear.

"In some of the mill communities I found that the mill corporations made it an unwritten rule to subscribe to all church and other similar funds, and did so upon a basis of one-tenth; that is, if the members of any given denomination wished to build a $2,000 church, the corporation would contribute the land on which to erect the building, and $200 in cash.

"South Carolina has prospered for a great many years, and contemporaneous with the mills has been the development of the State at large. Ten years ago the rural schools were not what they should have been and not what they are today. At that time the schools provided by the cotton mills, such as at Clifton, Pelzer, Pacolet, Graniteville, Anderson, Gaffney, Greenwood, Newberry, Converse, Whitney and other of the older cotton mills, stood out as beacon lights, and were very much more serviceable and potential than they probably are today, when there are so many good schools all over the State. But from the very outset the cotton mills were conspicuous in their leadership in providing good schools. When Mr. W. E. Lucas, for instance, built the Laurens Cotton Mill one of the first things he was wise enough to do was to suggest



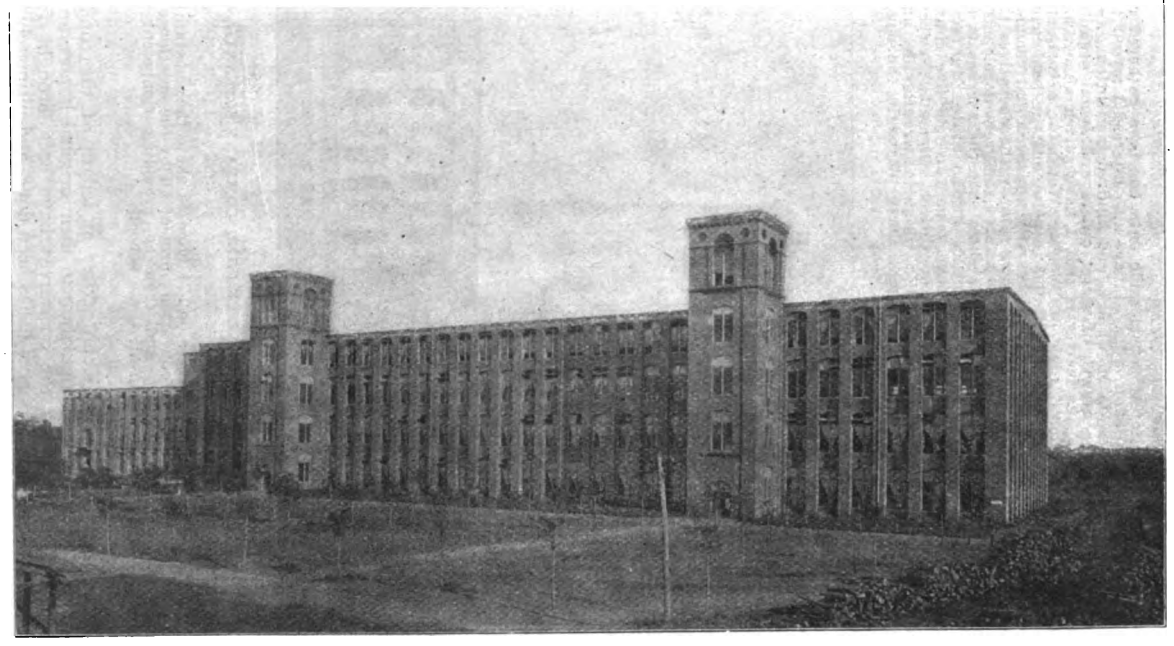
A MILL VILLAGE.

to the King's Daughters that he would take care of his own help, and he has always done so. He did this because he was satisfied that well-meaning outsiders did not understand how to deal with the help and would be imposed upon. He promptly built a first-class, high-grade school and started it at work. Encouraging and starting schools has been the policy of the mills ever since the early 50's, when William Gregg determined that no cotton mill community could succeed unless it cared for the education and morals of its help.

"The people in this State owe a debt of gratitude to the cotton mills for the conspicuous part they took in developing the school system, and even today, when you go to, say, Newberry, Pelzer, Piedmont, Pacolet, Clifton or Laurens, you will find handsome two-story brick structures that antedated the graded school building in very many of the interior towns of the State; yet these schools that belong distinctly to the cotton mill operatives are running right along, doing their good work. Cotton mills are continuing to contribute very largely out of their corporation funds to the support of the schools. Now that the State is more prosperous, and the cotton mills have added largely to the taxable values, the cotton mills do not in all instances support the schools entirely out of their treasuries as they once did, but the fund derived from school taxes—part of which is paid by the cotton mills, of course—is supplemented by the cotton mill when necessary to insure, first, the employment of first-class teachers; second, the running of the schools for at least nine months in the year.

"In a great many communities the building of the cotton mills—take Lancaster, for instance, with its new million-dollar cotton mill—has made it possible for the community to erect a handsome new graded school, and here, as in a great many other instances, the cotton mills pay very much more in the matter of taxes than is necessary to run a school which is to be attended by the children of the mill community. In a number of instances—Anderson and Rock Hill, for example—two groupings of cotton mills are paying taxes in the same school district, providing more than ample

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THE GRANBY MILL.

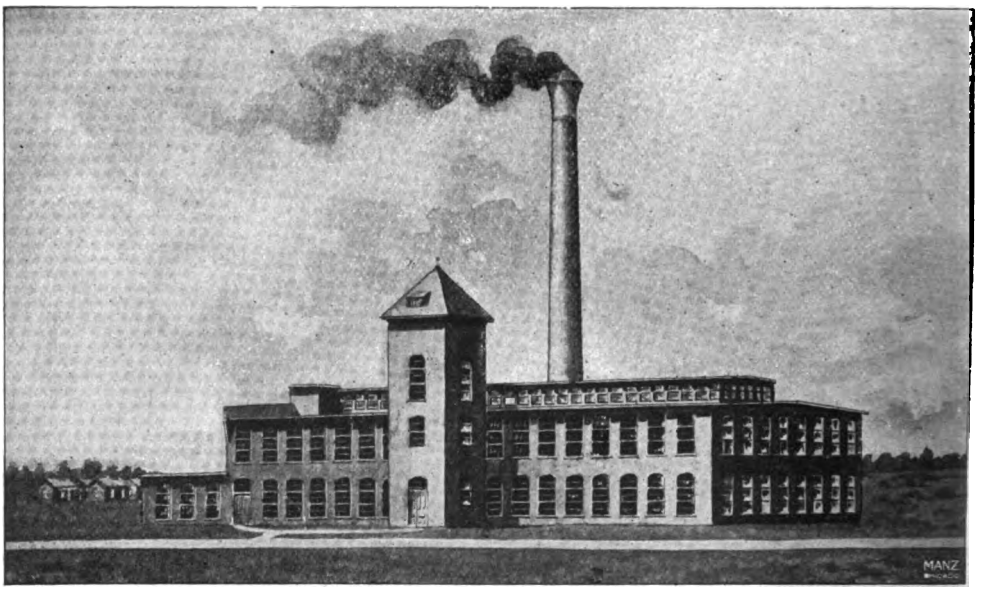
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funds for the running of the schools patronized by the children of the various mill communities.

"Five and ten years ago the cotton mills had their own schools and developed their own graded school systems, from the kindergarten up to the high school, and these schools were almost entirely attended by the children from the cotton mills. But today the disposition seems to be to mix the general patronage with that of the mill children, and not to make any line of demarkation between the children of the farmer, the merchant and those of the cotton mill, and it is very much better that this sentiment is growing, because the children of cotton mill operatives are of the same flesh and blood as their companions.

"With a great deal of interest considerable data has been gathered relative to the schools connected with the cotton mills. I have also interested myself in the building and development of churches, Y. M. C. A.'s, and kindred institutions, and then I have considered with interest the growth of secret orders and social organizations among the operatives. The fact of the matter is that I have gotten almost enough data on this subject and on the general topic of 'Welfare Work' for a complete volume, but all I can do is to deal with it generally, and to point out the tendencies on the part of the cotton mill officials, which is to be heartily approved and commended, and the appreciation of what is being done in this direction by the operatives themselves.

"In a later article I expect to say something about the great development of churches in the cotton mill communities. My records show that the average is more than one church to each of the cotton mill communities in the State. In fact, there are a number of cotton mill communities that have from three to five churches—such as Union-Buffalo, Jonesville, Tucapau, Converse, Clifton, Olympia, Newberry, Marlboro, Reedy River, Piedmont, Pelzer, Jackson Mills, Chiquola, Graniteville, and others. Of the denominations and the part that the mills have played in the encouragement of



FOUNTAIN INN MANUFACTURING COMPANY'S PLANT.

these churches, I expect to write later on. I hope to show the substantial encouragement that the mills have given to education; first of all by the erection of commodious and comfortable school buildings, and then by providing competent teachers and arranging for a full year's work in all these schools."

Conditions Compared.—Mr. Kohn writes at length of the condition of the people who compose the mill population in their original homes, and apparently without bias. He tells how the operatives have been brought from obscure homes in distant States, shows how it has been done, and ultimately reaches very much the same conclusions as Miss Beeks as to the needs. He treats fully of the question of foreign help to fill vacancies dealt with in another chapter, and makes these remarks in regard to the utilization of the negro, which are almost identical with those of Miss Beeks:

"The history of the early efforts of the industry in this State indicate that slave labor was very largely used. Experiment has since been made on several occasions, notably in Charleston and in Columbia, with colored help, but it has proven a failure, largely because of the lack of ambition on the part of the colored people as a race to accumulate money, and because of the disposition of the people to work two or three

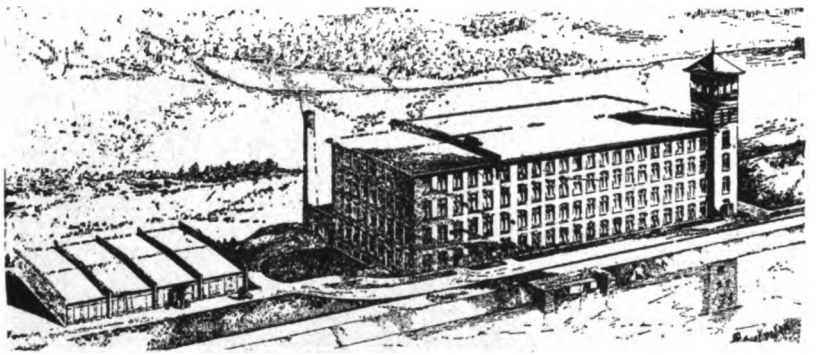
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days in the week and rest for the remainder of that period. There are, however, a considerable number of colored people employed very satisfactorily in the cotton mills as openers of cotton, as scrub men, in the machine shops and boiler rooms, in the picker rooms at some of the mills, and almost entirely in what is known as the outside force that attends to the cleaning of the grounds and the sanitary arrangements."

Attractiveness of Mill Life.—As to why the people go into the mills is a question impossible of full or even partial discussion here. That many have gone to the mills, and are satisfied and successful there, the statistics of the population so employed show.

The Home Life in Mill Villages.—In speaking of the home life of the operative, Mr. Kohn says:

"When the operatives go to the cotton mills they do not generally take very much with them. Of course, some who go there are more prosperous than others, but a great many of the North Carolinians who are now finding their way to the cotton mills have but little, because they have been accustomed to but little in their primitive mountain homes. It does not take them very long to get accustomed to modern things, including the phonograph and organ, when they get to the mill community, because the soliciting agents are exceedingly active in their efforts to get the new-comers interested in the 'ins' and 'outs' of the instalment business. When the operative arrives at the mill village he is turned over to what is known as the outside man, who assigns him with his family to the best available house. If there be any choice as to houses, it is given to those who have been at the mills longest, and from what I could gather, the desirability of the home is very largely based upon its nearness to the cotton mill, since the early start which has to be made in the day's work is about the worst phase of



A TYPE.

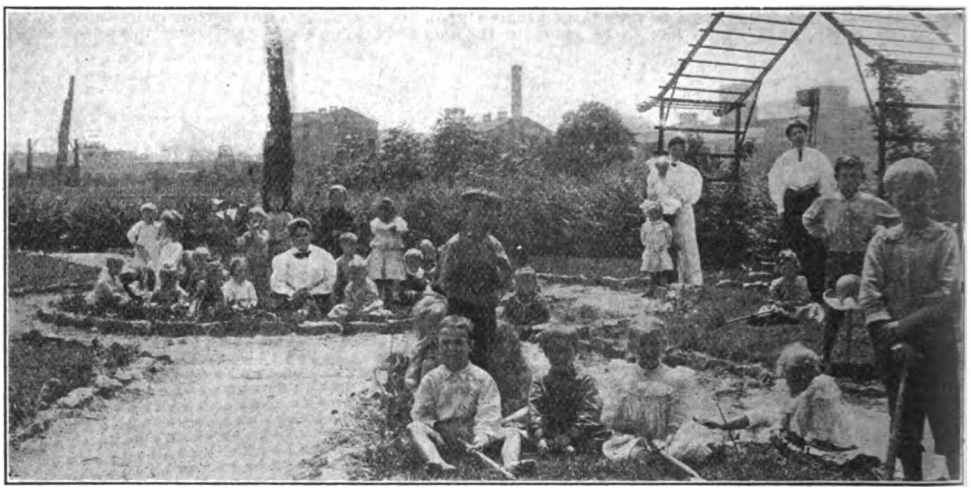
the mill work. In this State all the cotton mills own their dwellings and provide homes for their operatives at nominal rental. The idea is to build the homes adjacent to the cotton mills, to have the operatives lose as little time as possible in getting to and from their work. The idea of the mills providing homes for their help does not prevail in the New England States, and the operatives there rent from outside landlords, paying larger rents and getting their homes where they can. All the operatives' dwellings in this State are of wood, as are most of the homes in South Carolina. The purpose of the cotton mills is to get enough rent out of their operatives to pay interest on the investments, and to keep the houses in repair, and from what I could gather, this is not done because of the competition for labor, and the consequent concessions. The homes that are provided are very generally the same throughout the mill districts, only that some of the houses are kept in better repair and look fresher and cleaner, but as a rule the desire of the owners is to keep their houses in as good repair as possible, and they do not stint themselves in spending money on the villages if it can accomplish any good. The rent is generally by the room, and varies in the various communities, running all the way from nothing to $1 per room per month. I would give some idea of the way these things run: While it appears that in some communities the rents are higher than others, there are other compensations that equalize the apparent difference in rent. In some of the large communities the rent system is as follows: Piedmont—50 cents per room per month; Mollohon—50 cents per room per month; Monaghan—75 cents per room per month; Whitney—50 cents per room per month; Union—40 to 75 cents per room per month, according to distance from mill; Pelzer—50 cents per room per month; Pacolet—50 cents per room per month; Columbia—50 cents per room per month; Orangeburg—$2.50 per month for a three-room house, $5 per month for a six-room house; Lancaster, Chester and Fort Mill—20 cents per room per week; Graniteville—four rooms 94 cents to $1.36 every two weeks, and five rooms $1.50 every two weeks, according to location; Brandon—75 cents per room per month—this is the general charge for the Greenville group of mills; for the Anderson group the rent is $1 per room per month; for the group including Pelzer, Williamston and Piedmont the rent is 50 cents per room per month. The general style of the house is familiar to most people living in this State, and the types are generally what are known as three-, four- and six-room cottages. They are tightly built, have ample windows and doors, have a ten-foot ceiling, are generally weatherboarded and ceiled with wood on the inside, and there is no occasion for crowding, each of the houses generally occupying a lot covering fully one-quarter of an acre, and if there is any desire for more room it can be gotten. * * *

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"I found that there is a very general disposition and desire on the part of all the cotton mill owners to give their operatives garden plots, in the hope that they will cultivate both vegetable and flower gardens. A great many of the operatives do cultivate both kinds of gardens, but unfortunately, perhaps, there is no authority to require such things, and, as is the case on the farms or in the cities, these matters are regulated very largely by individual taste. At a number of cotton mills, notably Monaghan, Union, Whitney, Pelzer, Anderson, Rock Hill, prizes are offered for the best gardens, and some of these gardens are really atractive."

Thrift and Health.—But, however attractive the subject, the economics of the cotton mill villages cannot be much further pursued. The average board bill is from $8 to $12 per month. A housekeeping family of two can live on a little over $20 per month. At present a case of a family of fourteen persons living on $30 per month is frequently cited. Some of the operatives are thrifty individuals, saving their earnings and making them count. Mr. Kohn names a number of individuals he personally encountered possessing from $3,000 to $10,000 each.

As to health conditions, the statistics of the principal villages show substantial increases in births and in deaths, in the latter case despite the large increase in population since 1882. But this feature it is impossible to discuss, referring simply to the natural advantages of climate dealt with in the chapter on "Climatology."



IN THE KINDERGARTEN VEGETABLE GARDENS.

Child Labor.—The exhaustive discussion of the child labor situation in its relation to the cotton mills, contained in the publication of the Department of Agriculture, Commerce and Immigration, "The Cotton Mills of South Carolina," by August Kohn, affords complete information to any desiring special data on this subject. He excellently sums up the truth thus:

"The statute law of South Carolina may be taken as a basis for what is regarded by some legislators, the majority of whom are patriotic citizens, and are certainly beyond the control or influence of selfish mill officials, as proper employment of children in cotton mill work. It says that no child, unless there are special circumstances necessitating work, should be employed who is not 12 years of age. The law has fixed the minimum age at which children should be employed, and there is no reason why such a law or such a limit should be questioned. It is not questioned. With this statute on the books it may as well be admitted that there are children, and a great many of them, employed in the cotton mills of South Carolina. It may also be stated that a great many of these children are provided with a certificate from a magistrate, as required by the statute; it may also as well be admitted that there are a great many other children under the legal age working in the cotton mills without certificates. There is no use to mince words about this condition. Children under 12 are in the cotton mills, and a great many of them are there. There are not thousands upon thousands of children, as some of the agitators would have people believe, but there are a great many more in the mills than there ought to be. There are a great many more there than the mill officials want in the mills. But there are not as many, by a great deal, as those who have never been inside a cotton mill represent. Such people allege that they got their information as to the employment of children from the census reports, which they manipulate to suit their own purposes. The best way to get at the actual facts is to visit the cotton mills."

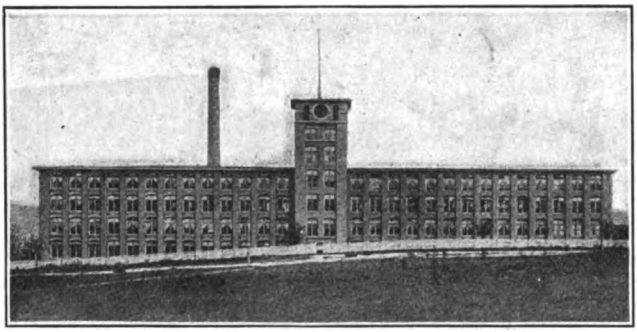
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South Carolina may be content, however, to rest on this question of child labor, with the revelation afforded by the statistics presented herewith, collected this year by the State without the slightest regard to the agitation for or against child labor. These figures, while gratifying and showing that a step in the right direction has been made, would indicate much better results in the next few years with further conservative legislation. That a law requiring registration of births is of paramount importance seems clear if the present child labor law is to be made of material effect; this, it appears from all investigation sources, the employers would welcome. There are strong economic reasons why the employers actually do not want children as employees in the mills. By no means does the cheapest labor give the largest dividends.

Schools and Churches.—The tables herewith as to schools and churches for which this industry is responsible seem sufficient to present to the reader of such a volume as this all the food for thought that he might desire. That splendid work has been and is being done is known from personal investigations made by the writer.

Pleasures of Life.—It would be desirable to enumerate what is going on in the mill districts in the way of providing pleasures for the operatives, halls for social gatherings, club houses equipped with gymnasiums and swimming pools, libraries, baseball and athletic fields, and such things, but space does not permit.

The Moral Tone.—In the mill districts of South Carolina no more moral people engaged in day labor are to be found in the world. A premium is placed on morality, and the opposite species is not tolerated by either the management



RICHLAND COTTON MILL.

of the mills or the operatives themselves. On this subject the closest investigation is courted. The influences in the mill districts are decidedly elevating, and the tone of morality is high.

As Town Builders.—In addition to what Mr. Parker is quoted above as saying, in reference to the mills as town builders, Mr. Kohn says:

"The thousands of operatives in the various cotton mill communities have given increased business to the stores, and it could not be different, because the thousands of dollars paid out each two weeks in any one of the cotton mill communities goes for the purchase of food, clothing and other legitimate expenses. All of this obviously tends to the upbuilding of the commercial life of the various towns. In Anderson, for instance, the payroll of the various mills in that immediate community aggregates $861,900. All this money gets into circulation thereabout in one way or another.

"In a recent article Mr. Arthur W. Page, in the *World's Work*, gives a pen picture of the new conditions that have been brought about by the cotton mills in Spartanburg. He writes as follows:

" 'What they have done for Spartanburg is more remarkable. There are about 50,000 bales of cotton grown in Spartanburg County. This used to be bought for mills in England and other parts of the United States and shipped away. With cotton selling at ten cents a pound, the country would get $2,500,000 for its 50,000 bales. Now the mills buy this cotton and manufacture it into cloth, which is worth on an average about twenty-five cents a pound. When shipped away from Spartanburg in this form the county gets $7,250,000 for that same 50,000 bales of cotton. But the mills manufacture about 200,000 bales of cotton grown outside the county, and that 200,000 bales increases in value about $19,000,000 from the time it comes into the county until it is shipped away again. The mills have made a direct increase in the county's yearly income of about $23,750,000. The farmers have been benefited by this more than any other class. They used to sell cotton to the local merchants under the ruinous credit system. Now a bale of cotton is seldom seen in Spartanburg. There is a mill on every road leading into town and the mills pay cash. Instead of paying interest to a merchant for credit, the farmer puts his money into the bank and draws interest himself. And he gets more for his cotton, also, since the mills pay a little higher than

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the market price for local cotton, because they do not have to pay freight on it. Before the mills came the farmers had practically no market for anything but cotton. The mill villages and the town now need more food that the local farmers can supply; so they can sell their food products up to prices elsewhere, plus the freight to Spartanburg. I heard a housekeeper complaining that 'frying-size' chickens used to cost only ten or twelve cents apiece, while now they cost that much a pound. The sheriff used to be busy foreclosing mortgages. Now the farmers have about $8,000,000 deposited in the banks in Spartanburg, and there are four farmers' banks in other parts of the county. The mills are not wholly responsible for this, but they, more than any other contributing cause, helped the farmer from poverty to progress; from a condition in which the banks had to 'run' the farmers, to the condition where the farmers 'run' the banks.

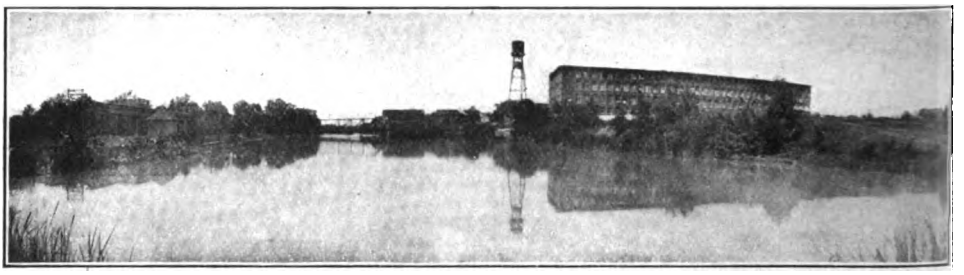
" 'The mills mean $23,750,000 a year to the county in money. They mean much more than this in human progress. There are 20,000 people in the mill village, most of whom have been brought out of the loneliness of farm life or isolation of the mountains into touch with progress.'

"Mr. John T. Rhett, secretary of the Spartanburg Chamber of Commerce, in response to my inquiry as to what the cotton mills had done for Spartanburg in the way of increasing values, writes me thus:

" 'There are in Spartanburg County thirty-seven mills of various sizes. These mills annually consume 250,000 bales of cotton, five times the amount raised in the county. It is estimated that these mills have increased the annual income of the county $23,000,000. The mills also turn loose in Spartanburg considerably over a half million dollars in dividends annually.

" 'The addition of such an industry as cotton manufacturing could not but increase the value of real estate in Spartanburg County very greatly for several reasons.

" '1. The cotton mills have been located in all parts of the county. There have arisen small towns wherever the mills have been erected, and the property, which was formerly on the market as farming lands, is now sold on the basis of city lots, which has elevated values very much. The mills located in the vicinity of the larger towns have developed the outskirts of these towns; so that the property has become very valuable, while before the coming of the mills the property was not rated as city property.



COLUMBIA MILLS COMPANY.

" '2. The enormous increase in the annual income of the county of Spartanburg, caused by the coming of the mills, has caused a general prosperity, and desirable property was soon purchased by those participating in the benefits. With the general prosperity came the desire to own homes and real estate. With ready purchasers always in sight there was a constant demand for real estate, and with the demand came the increase in value.

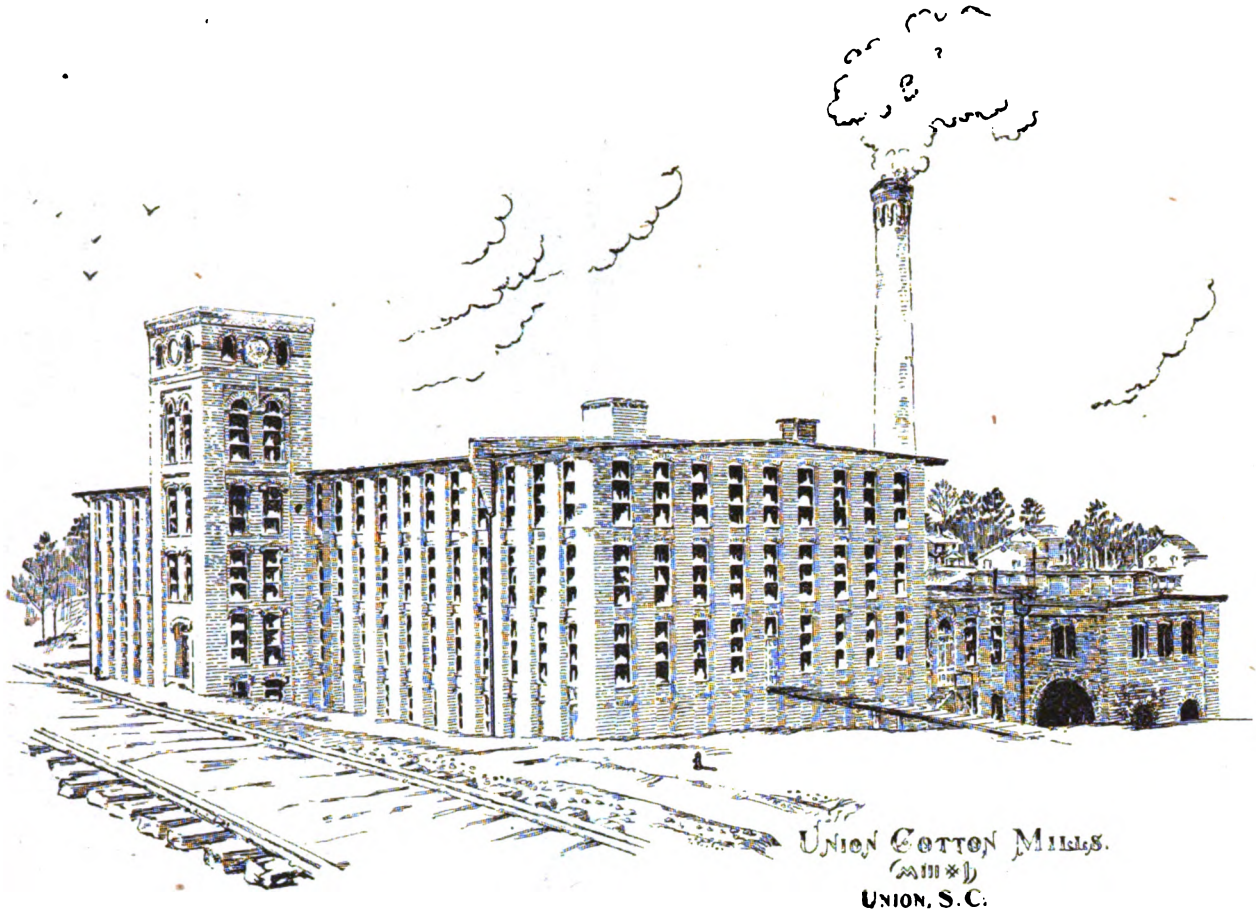
" '3. The dividends annually paid out in Spartanburg go to swell the bank accounts of the people in the county, and this money is soon reinvested. Real estate is considered an excellent investment in Spartanburg, and many of the dollars paid out by the mills go to purchase real estate. There is always a demand for good real estate, and there is a large amount of property changing hands in this county each year.

" 'There have been many reasons for the advance in the real estate in Spartanburg County, but there is but little doubt that the cotton mill industry has been the most important factor in this advance. New mills are being projected from time to time in this county and the old mills are constantly enlarging. There is every reason to presume that there will be as great an advance in the real estate of Spartanburg in the next few years as there has been in the past.' "

Turning to Finer Goods.—One of the greatest drawbacks to the new cotton mill industry in the South has been the natural tendency to make coarse goods, the markets for which are thousands of miles away, marketing the product through New York commission houses. The native manufacturer has apparently given no attention to the needs of native consumers, and has left the great home market to be supplied by the New England, English and even the Belgian manufacturer, who has decidedly the worst of the raw material. At this time, however, South Carolina mills are rapidly going to the finer grades of goods, and it is only a question of time before the clothing materials, now worn by the operatives themselves, bought from manufacturers abroad, will be made at home and marketed at home, and there will be a great demand for high-class designers from the textile school at Clemson College.

August Kohn's statements as to what the mills make are worthy of consideration in this regard:

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UNION COTTON MILLS.
(MILL No 1)
UNION, S.C.

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"The people of the State do not realize how great a variety of goods is made of cotton, and into what lines of manufacturing the South Carolina mills have gone. It was not very many years ago that practically all of the mills in this State were engaged in the manufacture of heavy goods or what are known as the coarser grades of cotton fabrics. Today they are making all qualities of cotton fabrics. They have not yet engaged in making odds and ends on account of the difficulty in selling, and because the standard shirtings and sheetings and plain print goods find a readier market and the cash returns come in quicker. The newer mills are rather inclined to engage in the manufacture of what are known as convertibles, out of which ladies' shirtwaists or gentlemen's shirts are made, and some of the most successful of the newer mills, such as Saxon and Drayton Mills, are engaged in the manufacture of lawns that weigh as little as twelve yards to the pound. The weight of the goods to the yard is indicative of the coarseness or fineness of the fabric. In other words, a print cloth that weighs 7.30 yards to the pound is of lighter weight and does not consume as much cotton as a cloth weighing 4.75 yards to the pound. The South Carolina cotton mills have established an international reputation on what are known as export goods, and the products of the South Carolina mills—Pacolet, Piedmont, Pelzer, Clifton, Whitney, Union-Buffalo and others—are at the head of the list for Chinese and Manchurian trade. Any report of the Asiatic trade that is picked up will show that the best prices obtain for South Carolina brands. These goods are what are known as 2.85; in other words, they weigh 2.85 yards to the pound. At the time of writing there was no demand for export goods, because of the fact that the Chinese markets have been overstocked for some time. The varied output of the cotton mills of South Carolina is a matter of intense interest, and the manufacturers in this State would do well, in my opinion, to enter largely the work of publicity and exploit their cotton products. At this time practically all of the goods made in this State are sold through commission houses, and a few of the mills have their own brands, but make what are known as standard goods for printing or converting. The time will come in this State when the manufacturers will have sufficient capital and take advantage of brands they will establish, and thereby get a bonus on the price of plain goods on account of the superior quality of the goods made and the desire for them in the markets. The time will come when the mills will get more closely in touch with the direct buyer. There is no question about the fact that the Southern goods are as well made, and the reports of special commissions indicate that in foreign markets they are in special demand, because of the superior quality of the cotton and the general character of the goods. * * *



MATCH GAME BETWEEN MILL TEAMS.

"At quite a number of the mills, such as the Saxon, Watts and the Victor, the 'Dobby' looms are used for the manufacture of fancy weaves, such as are generally used for shirtwaists and shirt patterns. Beautiful styles, designed and manufactured by Southern mills in this new line, are attracting a great deal of attention in the cotton goods market. There are a great many of the fancy designs on the market, made out of print cloths manufactured by South Carolina mills. The Spartan Mill, for instance, has an imitation English dress goods on the market that is beautiful, and one of the best sellers on the market. Goods that are made here, after they leave the 'converters,' are hardly recognizable, as they are given such beautiful finishes by printing or otherwise. The basis is supplied in 'the browns' by the Carolina mills.

"The South Carolina mills are entering to some extent into the manufacture of towels, bedspreads, Turkish bath towels, bath mats, fine damask tablecloths. The Irene Mills, in Gaffney, are turning out a very fine quality of mercerized damask towels. The Jordan Manufacturing Company, of Gaffney, and the Messrs. Graham, of Greenville, have built up a considerable trade in towels, and a great many people would be surprised to know how considerable a business the Lexington Manufacturing Company has established with its every-day bed ticking."

The United States reports on the class of goods made, as shown in Table A, cover the details on this matter.

Future Labor.—The discussion, no matter how brief, of the question of immigration in its vital relation to this industry can scarcely be of value in this sketch. History is now repeating itself, and immigration must come. That it can come, without disturbing existing economic and social conditions, has been demonstrated during the year 1906-7. That it must be a carefully "selected" immigration is evident, and it is equally evident that it cannot be obtained from other portions of the United States. The State of South Carolina has endeavored to profit by the experience of Massachusetts and avoid the undesirable results first experienced there, and the effects of which are still felt. But to accomplish this, intelligent and patriotic work of an exacting nature must be employed, and State "selection" of people at their original homes is a necessity.

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If the native help can be had, it is the State's duty to get it; if it cannot, it is equally the State's duty to choose, no matter what difficulties are encountered in the field, only people who can and will naturally assimilate with the natives to the material betterment of the commonwealth. This is written in the light of experimentation and experience that it has been the lot of few, if any, in America to encounter, when all the conditions are taken into consideration from the standpoint of ultimate results to the State.

Wages.—An exhaustive discussion on the subject of wages in the mills—important as the matter is—cannot be attempted. Mr. Kohn sums up the situation when he says:

"In this article I wish to take up the average pay to the operatives in the cotton mill and show how this has increased from year to year. It makes one of the most interesting studies in connection with the entire subject. Of course the demand for labor and the prosperity of the mills have been responsible for this increase. In a series of articles written five years ago I showed that the average pay per operative at that time was about 75 cents. It is now over $1.10. There is really very little difference in the wage scale in the various parts of the State, some sections offering slight inducements by concessions in the matter of room rent or something of the kind by which they hold their labor. * * *

"Another statement which is of especial interest, and which shows how wages have increased in the cotton mills, is taken from the comparative cost sheet of another Piedmont section cotton mill, giving the actual average pay per operative for the month of June in each of six years. It is as follows:

Average Pay per Operative.	
June, 1907	$1.23
June, 1906	1.10
June, 1905	1.03
June, 1904	.97
June, 1903	.88
June, 1902	.76

"The increase here shown from 1902 to 1907 is 38 per cent. I think it will therefore be safe, with all of the lights that I have before me, and all the data that I have been able to collect, to say that in five years' time the wage scale in this State has voluntarily been increased 35 per cent. It is to be remembered that the Southern cotton mills are today paying more money for wages than are the mills in old England. In a recent report of the United States Government on the foreign markets for the sale of American products, by a commission, of which Mr. William Whittam, Jr., was one of the members, this statement is made as to wages in England: 'The average weekly wages per operative in 1882 was $4.08; in 1893, $4.56; and at this writing, 1907, it is $4.88.' This is for a week of 55½ hours, and, as can be readily figured, the average pay per day is less than 70 cents, which would not begin to compare with the average pay in South Carolina even five years ago; and since then there has been an increase in this State of over 35 per cent. * * *

"There is practically no difference in the wage scale in the South and New England, particularly when the manufacturer takes into consideration the difference in the results, and when the operative figures that in the New England States the cost of living is very much more than it is in the South. * * *

"The General Assembly of South Carolina, at its last session, reduced the number of hours of labor per week from 66 to 62 hours, after July 1, 1907, and by this Act on the first of Janaury next the work-week for the cotton mills will constitute 60 hours. The chief loss as a result of this new law has been to the cotton mills by the cutting of production, and the loss on their investment by not being able to operate thereby to secure the maximum production. The chief loss to the operatives has been on those in the weave room, and where the pay is by the piece. * * *

Year.	Wage-earners.	Wages Paid.
1850	1,019	.....
1860	801	$ 123,300.00
1870	1,123	257,680.00
1880	2,018	380,844.00
1890	8,071	1,510,494.00
1900	30,201	5,066,840.00
1905 (average)	37,271	7,701,689.00
1905 (actual)	39,026	8,069,878.00
1907	54,419	11,495,430.77

"The development of the industry in this State has been out of proportion to the increase in other States, and the demand for labor. Increased wages have not brought additional help, as might have been expected for this State, because, as every one knows, the farmers and the industrial population generally have prospered equally. * * *

"To show the development and the steady demand for labor, this brief table, showing the average number of wage-earners in South Carolina cotton mills and the total wages paid, will be interesting.

"These figures (1907) as to the annual payrolls are incomplete, a number of the cotton mills failing to give me the figures. The complete returns would run the total for the payrolls for 1907 easily up to $12,500,000. The figures for all years, with the exception of 1907, are taken from the United States census reports, and those for 1907 are from the figures gathered by Commissioner E. J. Watson and myself."

It is not deemed necessary to give the statement by mills of the amount of wages paid annually, the statements above and in the 1905 figures of the Federal Government amply sufficing.

Schools and Colleges.—It has been impossible to obtain absolutely complete returns as to the number of attractive church buildings that the cotton manufacturers have built in their mill communities, paying for them either in whole or in part, but the number may be conservatively stated at not less than two hundred. In most cases these buildings were paid for entirely out of mill funds. The census, also, as to school houses and schools erected and established by the

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mill corporation for the education of the mill children is likewise incomplete, but sufficient returns have been obtained to show that approximately $350,000 has been expended for this purpose. With 31 of the mills failing to report on this subject of schools, the figures show that practically 11,000 children in the villages were attending regularly the kindergartens and the schools during the past year. In many cases the mill sustained all of the census of the operation of the schools, though in other instances they supplement the public school funds so as to enable the schools to run for full terms.

TEXTILE INDUSTRIES—1906.

Counties.	Total assessed value of real and personal property.	Total taxes charged.
Abbeville	$ 377,189	$ 6,782.25
Aiken	1,557,000	17,905.50
Anderson	4,088,931	52,130.54
Bamberg	42,000	714.00
Barnwell	3,000	36.00
Beaufort	.....	.....
Berkeley	.....	.....
Charleston	174,635	1,746.35
Cherokee	750,210	13,180.15
Chester	430,999	6,846.98
Chesterfield	.....	.....
Clarendon	3,300	50.32
Colleton (no report)	.....	.....
Darlington	374,580	6,379.43
Dorchester	.....	.....
Edgefield	50,736	1,116.20
Fairfield	109,200	1,556.10
Florence	.....	.....
Georgetown	4,460	60.61
Greenville	2,864,400	43,728.15
Greenwood	720,970	10,792.94
Hampton	.....	.....
Horry	.....	.....
Kershaw	240,000	4,500.00
Lancaster	469,560	11,621.61
Laurens	741,940	13,339.28
Lee	.....	.....
Lexington	155,600	1,946.90
Marion	201,140	4,220.76
Marlboro	412,638	7,609.80
Newberry	804,000	14,172.00
Oconee	460,380	8,060.98
Orangeburg	165,000	2,772.50
Pickens	742,626	14,710.32
Richland	2,353,709	26,633.46
Saluda	.....	.....
Spartanburg	5,418,822	82,349.85
Sumter	24,000	300.00
Union	1,913,710	37,263.18
Williamsburg	.....	.....
York	838,595	12,520.19
Totals	$26,493,330	$404,996.35

Taxation of the Mills.—Mr. Kohn says: "The tax lists indicate the large proportion of annual State, county and municipal taxes paid by the cotton mills each year. It will, I am sure, surprise a great many people to know that the few cotton mills scattered here and there, and that are given very little credit by some people for the development of the State, are today paying fully one-half million dollars in taxes. In casual conversations I asked a number of friends how much taxes they thought the cotton mills paid, and none of them had any idea of the real amount, largely underrating it. This matter of taxes is not cited with the view of claiming that the cotton mills or the corporations are being overtaxed. I have heard no complaint on this line, although the mill men believe that they pay their full quota of taxes towards the support of the State, county and municipal government, possibly more than their proportionate share. My purpose is simply to show how considerable a part of the economic wealth of the State the cotton mills now are and how much they contribute each year towards the maintenance of the government. It seems to be a very difficult matter to get accurate information, because of the indifference of the officials to answer inquiries. With the coöperation of Comptroller-General Jones I have been able to collect very interesting information as to the taxes paid by the cotton mills. His figures show that last year the cotton mills of South Carolina paid to the State and county authorities, through the county treasurers, $404,996.35. This does not take into account what was paid directly to the municipalities for city taxes or by the mill corporations to the municipalities on account of school bonds when such collections were made through the

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city or town authorities. The collection of $404,996.35 was on account of the State levy, the three-mill constitutional tax, and the special school and county taxes collected through the county authorities.

Sumter	$ 354.00
Bamberg	252.00
Greenville	2,325.00
Abbeville	2,538.61
Columbia	10,419.50
Spartanburg	12,300.00
Laurens	3,811.50
Honea Path	654.93
Yorkville	621.50
Camden	1,349.50
Greenwood	4,904.66
Anderson	8,022.96
Newberry	5,300.79
Pickens	50.00
Chester	1,200.00
Winnsboro	.....
Darlington	3,125.00
Rock Hill	3,997.50
	$61,327.45

"I have undertaken to gather statistics to supplement these with reference to the municipalities, and have received reports from a number of the towns and cities, but all have not replied.

"The statement I present, however, will be sufficiently complete to show what considerable portion of revenue is raised through the cotton mills. The above is a statement of the assessed valuations, together with the taxes annually collected from the cotton mills for State and county purposes.

"Herewith is a statement of the municipal taxes collected for 1906 as far as can be reached from replies to inquiries.

"Below is a summary of taxes collected for 1906 as far as reported.

"In a number of instances cities and towns have granted municipal exemptions from taxation to encourage the establishment of such manufacturing plants. Some of these periods of exemption have not yet expired, and in other instances they are now expiring.

State and county taxes	$404,996.35
Municipal	61,327.45
Franchise tax to State	22,106.89
Total	$488,430.69

"The total assessed valuations of cotton mill enterprises for 1906 was $26,734,378. For 1907 the assessed valuations on which taxes will have to be paid by the cotton mills is $28,598,201. In 1906 the total taxable values in South Carolina were $249,534,442. Therefore the cotton mills of the State are paying on more than one-tenth of the gross taxable values in the State, to say nothing of their pro rata share as to valuation. In addition to this tax, the cotton mills in 1906 have paid to the State Treasurer on account of the franchise tax $22,092.74, which is independent of the taxes based upon the assessed valuations.



GRANBY COTTON MILL.

"The cotton mills in South Carolina will this year, on account of the three-mill constitutional school tax, pay $85,794,003; and they will pay about $32,300 as their pro rata share of the special school district tax, to say nothing of the additional amounts they will pay for the support of schools in their immediate communities. This does not take into consideration the voluntary contributions made by many mill corporations for the support of schools in their villages. The school matter, however, will be considered more in detail under the head of 'Welfare Work.' This particular article indicates that the few cotton mills in this State are now paying one-half million dollars of taxes for the support of the government."

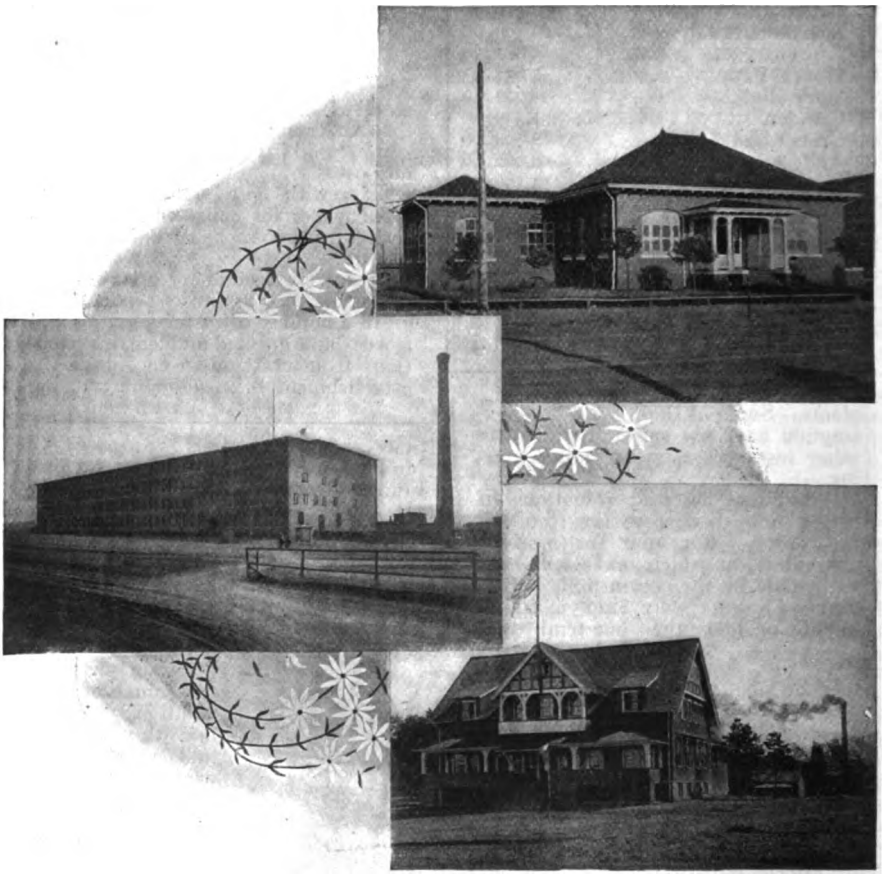
General Summary.—In the tables herewith are given all the available statistics of the cotton manufacturing industry. A close study is invited. It should be stated, however, that some mills have not given full reports, but these the tables show. It has been the effort in this chapter to present fairly and impartially

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the main features as to the State's chief manufacturing industry, and to present them fairly and honestly. Honest, fair-minded people, whose patriotism, whose love of bettering conditions have placed them above the suspicion of partisanship, have been quoted.

And United States statistics, which speak volumes, have been presented. Cumbersome details have been avoided; the purpose being to present essentials and to let figures rather than statements and opinions speak for themselves.

In the table projected new mills there may be some that will not materialize,



A TYPICAL COTTON MILL, CLUB HOUSE AND OFFICE.

as is the case always with projected enterprises, but the vast majority will, and it is worth while to note the fact that South Carolinians, despite panicky financial conditions, have such confidence in this industry that they are going ahead and putting their money into new plants, though at this moment scarcely one of them feels certain as to whence his labor is to be had.

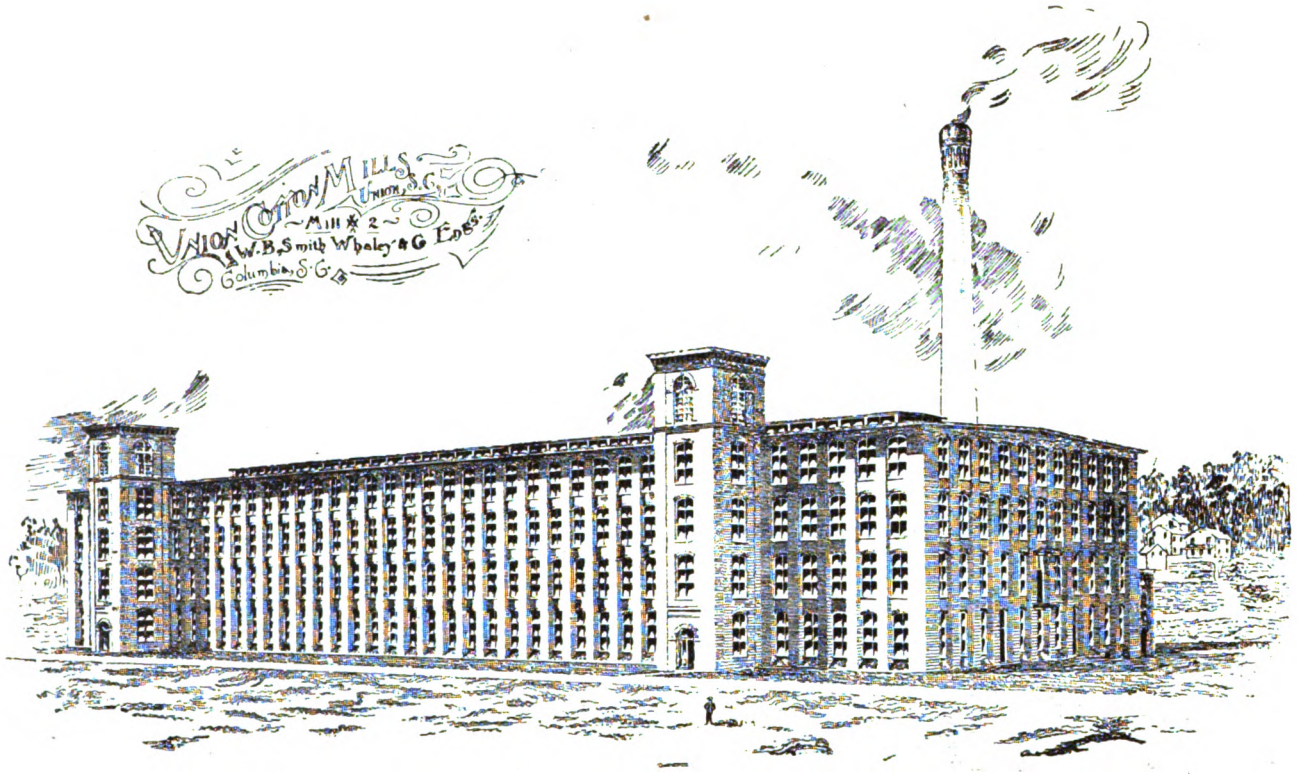
Time is working wondrous economic changes, and this greatest of all in South Carolina promises to work its own salvation and prosperity, and at the same time, for reasons frequently indicated, tend to a more rapid commercial and agricultural development.

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Directory of South Carolina Cotton Mills, Showing Location and Name of President.

Abbeville Cotton Mills, Abbeville, S. C.—G. A. Visanska.
Aetna Cotton Mills, Union, S. C.—W. H. Sartor.
Aiken Manufacturing Company, Bath, S. C.—Thos. Barrett, Jr.
American Spinning Company, Greenville, S. C.—J. H. Morgan.
Anderson Cotton Mills, Anderson, S. C.—R. E. Ligon.
Apalache Mills, Arlington, S. C.—Lewis W. Parker.
Aragon Cotton Mills, Rock Hill, S. C.—Alex. Long.
Arcade Cotton Mills, Rock Hill, S. C.—R. T. Fewell.
Arcadia Mills, Spartanburg, S. C.—H. A. Ligon.
Arkwright Mills, Spartanburg, S. C.—R. Z. Cates.
Bamberg Cotton Mills, Bamberg, S. C.—John H. Cope.
Banna Manufacturing Company, Goldville, S. C.—Geo. M. Wright.
Batesville Mill, Batesville, S. C.—Mrs. M. P. Gridley.
Beaumont Manufacturing Company, Spartanburg, S. C.—D. L. Jennings.
Belton Mills, Belton, S. C.—Ellison A. Smyth.
Brandon Mills, Greenville, S. C.—J. I. Westervelt.
Brogon Mills, Anderson, S. C.—J. A. Brock.
Calhoun Falls Manufacturing Company, Calhoun Falls, S. C.—W. F. Cox.
Calumet Manufacturing Company, Liberty, S. C.—H. L. Clayton.
Camperdown Mills, Greenville, S. C.—C. E. Graham.
Capital City Mills, Columbia, S. C.—Lewis W. Parker.
Hamilton Carhart Cotton Mills, Rock Hill, S. C.—Hamilton Carhart.
Carolina Mills, Greenville, S. C.—J. I. Westervelt.
Cherokee Falls Manufacturing Company, Cherokee Falls, S. C.—J. C. Plonk.
Cheswell Cotton Mills, Westminster, S. C.—W. E. Cheswell.
Chiquola Manufacturing Company, Honea Path, S. C.—J. D. Hammett.
Clifton Manufacturing Company, Clifton, S. C.—A. H. Twitchel.
Clinton Cotton Mills, Clinton, S. C.—M. S. Bailey.
Clover Cotton Mills, Clover, S. C.—G. H. O'Leary.
Columbia Mills Company, Columbia, S. C.—C. K. Oliver.
Conneross Yarn Mill, Anderson, S. C.—R. L. Farmer.
D. E. Converse Company, Glendale, S. C.—A. H. Twitchel.
Courtenay Manufacturing Company, Newry, S. C.—Campbell Courtenay.
Cowpens Manufacturing Company, Cowpens, S. C.—R. R. Brown.
Cox Manufacturing Company, Anderson, S. C.—W. F. Cox.
Darlington Manufacturing Company, Darlington, S. C.—G. H. Milliken.
Dillon Cotton Mills, Dillon, S. C.—W. M. Hamer.
Drayton Mills, Spartanburg, S. C.—Arch B. Calvert.
Easley Cotton Mills, Easley, S. C.—G. M. Geer.
Edgefield Manufacturing Company, Edgefield, S. C.—D. A. Tompkins.
Enoree Manufacturing Company, Enoree, S. C.—Grange S. Coffin.
Eureka Cotton Mills, Chester, S. C.—LeRoy Springs.
Fairfield Cotton Mills, Winnsboro, S. C.—T. K. Elliott.
Fingerville Manufacturing Company, Fingerville, S. C.—J. B. Liles.
Fork Shoals Manufacturing Company, Fountain Inn, S. C.—W. P. Nesbitt.
Fountain Inn Manufacturing Company, Fountain Inn, S. C.—R. L. Graham.
Franklin Mills, Easley, S. C.—J. M. Geer.
Gaffney Manufacturing Company, Gaffney, S. C.—T. E. Moore.
Glenn-Lowry Manufacturing Company, Whitmire, S. C.—W. M. Coleman.
Glenwood Cotton Mills, Easley, S. C.—W. M. Hagood.
Globe Manufacturing Company, Gaffney, S. C.—W. M. Webster.
Gluck Mills, Anderson, S. C.—Robt. E. Ligon.
Granby Cotton Mills, Columbia, S. C.—Lewis W. Parker.
Graniteville Manufacturing Company, Graniteville, S. C.—T. I. Hickman. (Includes Vaucluse.)
Greenwood Cotton Mills, Greenwood, S. C.—J. K. Durst.
Grendel Cotton Mills, Greenwood, S. C.—A. F. McKissick.
Hamer Cotton Mills, Hamer, S. C.—W. M. Hamer.
Hartsville Cotton Mill, Hartsville, S. C.—C. C. Twitty.
Hermitage Cotton Mills, Camden, S. C.—H. G. Carrison.
Highland Park Manufacturing Company, Rock Hill, S. C.—E. H. Johnston.
Huguenot Mills, Greenville, S. C.—R. L. Graham.
Inman Mills, Inman, S. C.—Jas. A. Chapman.
Irene Mills, Gaffney, S. C.—H. D. Wheat.
Isaqueena Mills, Central, S. C.—R. G. Gaines.

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Jackson Mills, Iva, S. C.—D. P. McBrayer.
Jonesville Manufacturing Company, Jonesville, S. C.—Emslie Nicholson.
Jordan Manufacturing Company, Wellford, S. C.—C. E. Rodgers.
Lancaster Cotton Mills, Lancaster S. C.—LeRoy Springs.
Langley Manufacturing Company, Langley, S. C.—Thos. Barrett.
Laurens Cotton Mills, Laurens, S. C.—N. B. Dial.
Lexington Manufacturing Company, Lexington, S. C.—W. P. Roof.
Liberty Cotton Mills, Liberty, S. C.—J. P. Smith.
Limestone Mills, Gaffney, S. C.—J. A. Carroll.
Lockhart Mills, Lockhart, S. C.—Alfred H. Moore.
Lockmore Mills, Yorkville, S. C.—Thos. P. Moore.
Lydia Cotton Mills, Clinton, S. C.—M. S. Bailey.
Manchester Cotton Mills, Rock Hill, S. C.—J. H. Barron.
Manetta Cotton Mills, Lando, S. C.—B. D. Heath.
Marion Manufacturing Company, Marion, S. C.—W. Stackhouse.
Marlboro Cotton Mills, McColl, S. C.—Robert Chapman.
Mary Louise Mills, Cowpens, S. C.—B. E. Wilkins.
McGee Manufacturing Company, Greenville, S. C.—Henry P. McGee.
Middleburg Mills, Batesburg, S. C.—Allen Jones.
Mill Fort Mill Company, Fort Mill Mfg. Co., Fort Mill S. C.—LeRoy Springs.
Mills Manufacturing Company, Greenville, S. C.—O. P. Mills.
Maple Cotton Mills, Dillon, S. C.—W. M. Hamer.
Mollohon Manufacturing Company, Newberry, S. C.—Geo. Summer.
Monaghan Mills, Greenville, S. C.—Thos. F. Parker.
Monarch Cotton Mills, Union, S. C.—P. E. Fant.
Neely Manufacturing Company, Yorkville, S. C.—W. B. Moore.
Newberry Cotton Mills, Newberry, S. C.—Z. F. Wright.
Ninety-Six Cotton Mill, Ninety-Six, S. C.—A. F. McKissick.
Norris Cotton Mills Company, Cateeche, S. C.—T. M. Norris.
Octararo Mill Company, Clio, S. C.—C. M. Worth.
Olympia Cotton Mills, Columbia, S. C.—Lewis W. Parker.
Orange Cotton Mills, Orangeburg, S. C.—T. H. Wannamaker.
Orangeburg Manufacturing Company, Orangeburg, S. C.—W. G. Smith.
Orr Cotton Mills, Anderson, S. C.—S. M. Orr.
Pacolet Manufacturing Company, Pacolet, S. C.—Victor M. Montgomery.
Palmetto Cotton Mills, Columbia, S. C.—W. P. Roof.
Pelham Mills, Pelham, S. C.—Arthur Barnwell.
Pelzer Manufacturing Company, Pelzer, S. C.—Ellison A. Smyth.
Pendleton Cotton Mills, Pendleton, S. C.—D. P. McBrayer.
Pendleton Manufacturing Company, Autun, S. C.—D. P. McBrayer.
Pickens Cotton Mills, Pickens, S. C.—W. M. Hagood.
Piedmont Manufacturing Company, Piedmont, S. C.—W. E. Beattie.
Pine Creek Manufacturing Company, Greenville, S. C.—Malcomb Campbell.
Poe Manufacturing Company, Greenville, S. C.—F. W. Poe.
Reedy River Manufacturing Company, Reedy River, S. C.—J. H. Maxwell.
Richland Cotton Mills, Columbia, S. C.—Lewis W. Parker.
Riverside Manufacturing Company, Anderson, S. C.—D. P. McBrayer.
Royal Bag and Yarn Company, Charleston, S. C.—Geo. A. Wagener.
Saxa-Gotha Mills, Lexington, S. C.—Allen Jones.
Saxon Mills, Spartanburg, S. C.—John A. Law.
Seminole Manufacturing Company, Clearwater, S. C.—Thos. Barrett, Jr.
Seneca Cotton Mills, Seneca, S. C.—Malcomb Campbell.
Spartan Mills, Spartanburg, S. C.—W. S. Montgomery.
Springstein Mills, Chester, S. C.—LeRoy Springs.
Sumter Cotton Mills, Sumter, S. C.—D. James Winn.
Tavora Cotton Mills, Rock Hill, S. C.—S. M. McNeel.
Townsend Cotton Mill, Anderson, S. C.—H. C. Townsend.
Toxaway Mills, Anderson, S. C.—D. P. McBrayer.
Tucapau Mills, Wellford, S. C.—J. F. Cleveland.
Tyger Cotton Mills, Fairmont, S. C.—J. B. Lee.
Union-Buffalo Mills Company, Union, S. C.—Aug. W. Smith.
Valley Falls Manufacturing Company, Spartanburg, S. C.—W. P. Roof.
Vardry Cotton Mills, Greenville, S. C.—L. M. McBee.
Victoria Cotton Mills, Rock Hill, S. C.—W. J. Roddey.
Victor Manufacturing Company, Greer, S. C.—Lewis W. Parker.
Walhalla Cotton Mills, Walhalla, S. C.—Edwin R. Lucas.
Walterboro Cotton Mills, Walterboro, S. C.—Paul Sanders.
Warren Manufacturing Company, Warrenville, S. C.—E. F. Verdery.
Ware Shoals Manufacturing Company, Ware Shoals, S. C.—B. D. Riegel.

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Watts Mills, Laurens, S. C.—W. E. Lucas.
Whitaker Cotton Mills, Blacksburg, S. C.—C. M. Smith.
Whitney Manufacturing Company, Spartanburg, S. C.—John B. Cleveland.
Williamston Mills, Williamston, S. C.—Jas. P. Gossett.
Woodruff Cotton Mills, Woodruff, S. C.—Aug. W. Smith.
Woodside Cotton Mills, Greenville, S. C.—John T. Woodside.
Wylie Mills, Chester, S. C.—T. K. Elliott.
York Cotton Mills, Yorkville, S. C.—J. G. Wardlaw.

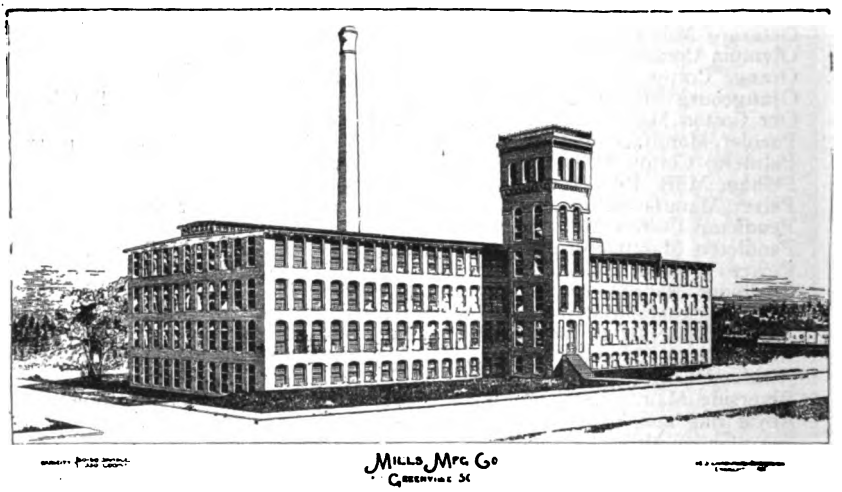
Miscellaneous.

Southern Aseptic Laboratory, Columbia, S. C.—G. A. Guignard.
American Press Cloth Company, Columbia, S. C.—John J. Seibels.

Knitting Mills.

Corona Mills, Anderson, S. C.—G. W. Evans.
Cross Hill Hosiery Mills, Cross Hill, S. C.—P. S. Bailey.
Blue Ridge Hosiery Mills, Landrum, S. C.—Joseph Lee.
Ashley Manufacturing Company, Newberry, S. C.—John A. Blackwelder.
Crescent Manufacturing Company, Spartanburg, S. C.—D. D. Little.
Excelsior Knitting Mills, Union, S. C.—Emslie Nicholson.
Oconee Knitting Mills, Walhalla, S. C.—R. T. Jaynes.
Westminster Knitting Mills, Westminster, S. C.—W. P. Anderson.

Notes.—Postoffices as given are of the mills, and not necessarily of the home addresses of each of the presidents.



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Counties.	Location.	Name.	Date of Organization.	Capital Stock—Par Value.	Capital Stock—Market Value.	Actual Value.	Spindles.	Looms.	Cotton Consumed.	Yearly Product.	Actual Employés.	Mill Population.	Children Under 16.	Children in Village.	Horse-power—Water Inc. Electric.	Horse-power—Steam Inc. Elec.	Enlargements. Spindles.	Enlargements. Looms.	Cost Enlargement.
Abbeville	Abbeville	Abbeville Cotton Mills	1896	$642,700	$610,930	$626,815	28,800	940	12,000	$650,000	375	750	50	325	.....	1,250	.....	.....	.....
Aiken	Bath	Aiken Mfg. Co.	1894	400,000	436,000	400,000	27,000	792	4,000	400,000	425	1,000	65	200	500	500	.....	.....	.....
	Clearwater	Seminole Manufacturing Co.	1907	600,000	339,822	600,000	22,000	512	3,500	350,000	350	800	*40	*300	200	600	.....	.....	.....
	Graniteville	Graniteville Mfg. Co.	1845	600,000	960,000	960,000	55,000	1,700	24,000	1,800,000	900	3,000	40	500	1,000	1,250	.....	.....	.....
	Langley	Langley Mfg. Co.	1870	700,000	700,000	700,000	44,000	1,300	20,000	1,400,000	900	2,500	150	500	500	1,500	.....	.....	.....
	Warrenville	Warren Mfg. Co.	1897	500,000	505,000	505,000	35,000	1,000	4,500	580,000	400	1,000	65	282	.....	1,000	.....	.....	.....
Anderson	Anderson	Anderson Cotton Mills	1889	600,000	600,000	600,000	70,000	1,864	10,238	894,817	900	2,500	100	800	1,800	800	.....	.....	.....
	Belton	Belton Mills	1899	700,000	714,000	714,000	53,000	1,250	12,000	1,500,000	900	2,000	75	200	2,000	2,000	.....	.....	$300,000
	Calhoun Falls	Calhoun Mills	1907	400,000	400,000	400,000	16,000	400	6,000	*250,000	400	900	60	175	600	.....	.....	.....	.....
	Anderson	Brogan Mills	1902	500,000	450,000	400,000	25,000	864	7,000	1,000,000	600	1,200	40	400	.....	1,000	.....	864	25,000
	Anderson	Conneross Yarn Mill	1904	60,000	.....	25,000	840	.....	2,000	90,000	48	100	2	.....	75	.....	.....	.....	.....
	Honea Path	Chignola Mfg. Co.	1902	400,000	363,850	363,850	40,320	1,000	5,500	600,000	400	1,000	67	201	.....	1,300	.....	.....	.....
	Anderson	Corona Mills	1903	50,000	.....	17,750	.....	.....	.....	50,000	60	.....	.....	.....	.....	.....	.....	.....	.....
	Anderson	Cox Mfg. Co.	1899	200,000	210,000	200,000	25,000	.....	2,700	450,000	275	400	76	116	.....	800	.....	.....	.....
	Anderson	Gluck Mills	1903	450,000	450,000	450,000	32,000	672	1,674	342,956	300	800	40	300	.....	750	.....	.....	.....
	Iva	Jackson Mills	1905	325,000	.....	231,450	20,160	640	7,500	486,000	225	550	50	125	.....	850	.....	.....	.....
	Anderson	Orr Cotton Mills	1899	800,000	800,000	800,000	57,496	1,504	12,000	1,000,000	700	1,600	75	500	2,200	1,000	.....	.....	.....
	Pelzer	Pelzer Mfg. Co.	1881	1,000,000	1,650,000	1,700,000	130,000	3,200	36,000	2,500,000	2,000	4,500	200	1,400	6,000	4,000	.....	.....	100,000
	Pendleton	Pendleton Cotton Mills	1903	25,750	25,750	25,750	3,136	.....	480	72,000	45	150	6	26	.....	400	.....	.....	7,000
	Pendleton	Pendleton Mfg. Co.	1838	.....	.....	34,170	2,500	.....	1,800	147,000	58	137	12	65	80	125	.....	.....	.....
	Anderson	Riverside Mfg. Co.	1889	215,000	215,000	215,000	18,928	.....	4,000	360,000	195	700	18	50	640	.....	.....	.....	1,500
	Anderson	H. C. Townsend Cotton Mill	1900	25,000	25,000	25,000	5,000	.....	1,540	230,000	100	240	45	100	225	60	.....	.....	.....
	Anderson	Toxaway Mills	1902	174,500	174,500	174,500	16,128	484	2,500	245,000	165	500	12	70	600	.....	.....	.....	.....
	Williamston	Williamston Mills	1900	300,000	270,000	300,000	32,256	816	5,000	400,000	200	500	25	200	1,000	1,000	.....	.....	.....
Bamberg	Bamberg	Bamberg Cotton Mills	1903	140,000	70,000	70,000	10,752	248	2,000	185,000	175	500	18	100	.....	325	.....	.....	.....
Barnwell	Blackville	Alling & Green Knitting Mills	1902	.....	.....	4,000	.....	.....	110	21,600	30	100	.....	60	.....	8	.....	.....	.....
Charleston	Charleston	Royal Bag and Yarn Mfg. Co.	1900	451,100	336,660	330,660	12,000	330	6,570	1,009,739	400	700	12	100	.....	600	.....	.....	.....
	Charleston	Woodstock Hardwood Spool Co.	....	.....	.....	.....	.....	.....	.....	.....	35	50	.....	.....	.....	.....	.....	.....	.....
Cherokee	Cherokee Falls	Cherokee Falls Mfg. Co.	1882	200,000	290,000	290,000	29,960	608	3,700	300,000	300	550	34	232	1,000	.....	.....	.....	.....
	Gaffney	Gaffney Mfg. Co.	1892	857,000	771,000	771,000	61,648	1,566	9,600	900,000	700	1,800	116	600	.....	2,000	.....	.....	.....
	Gaffney	Globe Mfg. Co.	1905	46,200	46,200	46,200	3,860	.....	1,800	150,000	45	125	10	30	.....	150	.....	.....	.....
	Gaffney	Irene Mills	1905	50,000	38,400	38,400	3,328	76	800	200,000	125	150	4	25	.....	175	1,600	30	.....
	Gaffney	Limestone Mills	1900	187,500	206,250	210,000	25,000	650	3,000	312,500	350	600	42	175	.....	725	.....	.....	.....
	Blacksburg	Whitaker Cotton Mills	....	33,800	20,280	21,450	3,120	.....	1,200	90,000	100	115	4	13	.....	150	.....	.....	.....
Chester	Chester	Eureka Cotton Mills	1898	150,000	135,000	135,000	14,748	.....	4,500	330,000	165	235	45	100	.....	400	.....	.....	.....
	Chester	Manetta Cotton Mills	1899	200,000	280,000	300,000	18,542	256	10,000	1,000,000	700	1,800	126	280	250	750	.....	.....	.....
	Chester	Springstein Mills	1899	100,000	165,000	200,000	14,112	750	2,500	550,000	400	1,200	150	500	.....	850	.....	.....	.....
	Chester	Wylie Mills	1900	150,000	180,000	180,000	20,160	.....	2,700	275,000	225	320	37	135	.....	575	.....	.....	.....

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COTTON MILLS IN SOUTH CAROLINA—1907.—Con.

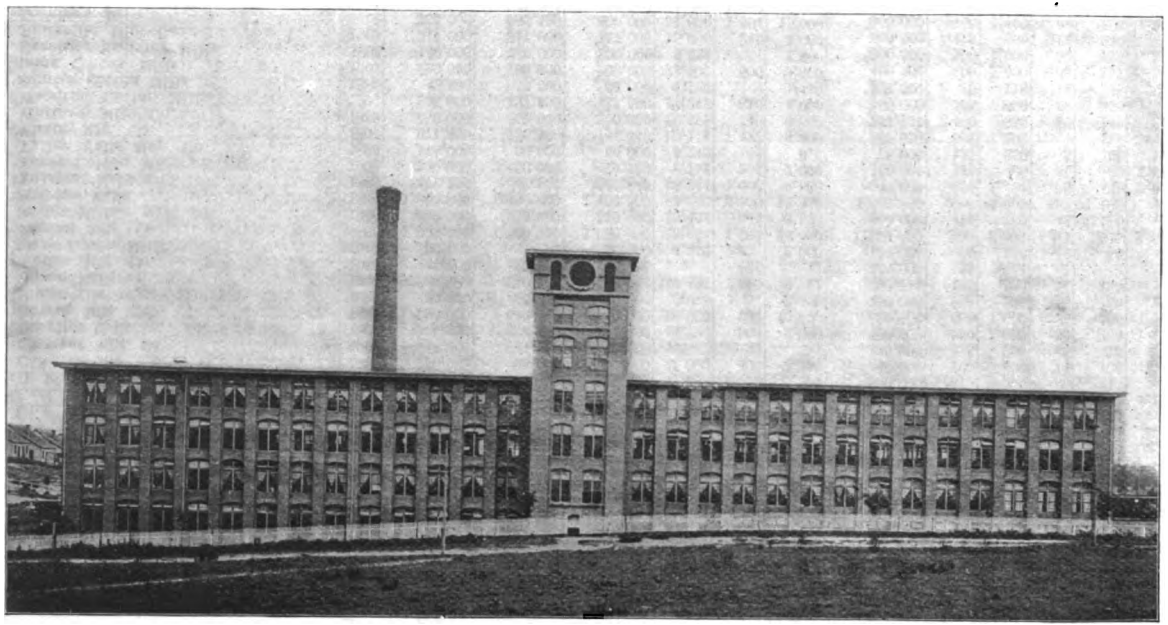
Counties.	Location.	Name.	Date of Organization.	Capital Stock—Par Value.	Capital Stock—Market Value.	Actual Value.	Spindles.	Looms.	Cotton Consumed.	Yearly Product.	Actual Employes.	Mill Population.	Children Under 16.	Children in Village.	Horse-power—Water Inc. Electric.	Horse-power—Steam Inc. Elec.	Enlargements. Spindles.	Enlargements. Looms.	Cost Enlargement.
Oconee	Clemson	Clemson College Textile Dept.	1897	.....	.....	.....	682	16	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Clarendon	Manning	Manning Knitting Mills	1896	.....	.....	$10,000	.....	.....	.....	$40,000	75	*250	*5	*50	.....	*35	.....	.....	.....
Colleton	Walterboro	Walterboro Cotton Mills	1905	$100,000	$52,125	82,625	8,500	276	900	76,000	125	300	15	65	.....	250	.....	.....	.....
Darlington	Darlington	Darlington Mfg. Co.	1881	1,000,000	750,000	825,000	51,392	1,464	6,000	600,000	600	1,800	50	500	.....	1,500	.....	.....	$15,000
	Hartsville	Hartsville Cotton Mills	1900	324,300	321,314	324,300	29,000	700	3,000	475,000	350	700	50	350	.....	1,500	6,000	120	60,000
Edgefield	Edgefield	Edgefield Manufacturing Co.	1895	120,800	.....	84,560	5,000	322	1,568	167,908	175	300	26	152	.....	150	5,000	322	*75,000
Fairfield	Winnsboro	Fairfield Cotton Mills	1906	250,000	182,000	182,000	25,000	500	3,510	390,000	375	565	40	140	.....	900	.....	.....	.....
Greenville	Greenville	American Spinning Co.	1895	600,000	635,000	617,500	40,896	758	12,000	980,465	700	2,000	104	355	.....	1,500	.....	.....	.....
	Batesville	Batesville Mills, Putman Estate	1881	.....	.....	18,000	2,600	.....	750	*75,000	47	100	7	22	40	40	.....	.....	.....
	Brandon	Brandon Mills	1899	356,800	392,480	410,320	40,320	992	7,200	652,733	420	922	97	598	1,200	.....	.....	.....	.....
	Greenville	Camperdown Mills	1904	100,000	.....	140,000	10,000	432	3,000	300,000	360	1,200	20	500	150	400	.....	.....	.....
	Greenville	Carolina Mills	1900	80,500	40,000	80,500	6,000	176	1,500	25,773	84	158	27	108	200	.....	6,000	180	*100,000
	Fork Shoals	Fork Shoals Manufacturing Co.	1900	50,000	.....	55,000	5,248	.....	1,200	100,000	60	150	18	.....	250	70	.....	.....	50,000
	Fourtain Inn	Fountain Inn Mfg. Co.	1898	100,000	100,000	125,000	10,000	160	2,500	350,000	150	350	91	175	.....	272	10,000	160	*120,000
	Greers	Franklin Mills	1900	67,400	47,500	47,500	10,000	188	2,750	450,000	200	250	25	50	.....	420	.....	.....	.....
	Greenville	Huguenot Mills	1886	140,000	140,000	140,000	6,400	293	1,800	240,000	220	*625	40	*180	.....	350	.....	.....	.....
	Greenville	Mills Mfg. Co.	1895	371,000	350,498	360,900	31,000	816	5,000	400,000	450	1,200	50	400	.....	1,000	.....	.....	.....
	Greenville	Monaghan Mills	1900	700,000	700,000	700,000	60,000	1,460	8,000	620,000	700	1,800	200	500	.....	2,000	.....	.....	.....
	Greenville	McGee Mfg. Co.	1903	91,400	91,400	91,400	3,200	44	1,000	400,000	125	300	6	25	.....	150	.....	.....	.....
	Pelham	Pelham Mills	1880	300,000	150,000	150,000	10,752	.....	4,359	329,850	300	500	40	140	650	550	.....	.....	.....
	Piedmont	Piedmont Mfg. Co.	1874	800,000	1,320,000	1,350,000	67,300	2,066	24,000	1,800,000	1,200	3,500	222	1,000	3,000	2,200	.....	.....	.....
	Greenville	F. W. Poe Mfg. Co.	1905	500,000	650,000	610,000	61,312	1,520	7,500	*620,000	700	2,000	200	*900	.....	2,500	.....	.....	.....
	Greenville	Reedy River Mfg. Co.	1898	200,000	.....	164,087	12,000	371	3,766	250,506	225	625	30	200	525	325	.....	.....	.....
	Greenville	Union Bleachery and Finishing Co.	1902	294,000	147,000	147,000	.....	.....	.....	.....	75	250	5	50	.....	150	.....	.....	.....
	Greenville	Vardry Cotton Mills	1906	71,000	63,000	63,000	6,480	.....	1,000	120,000	50	62	5	12	80	140	.....	.....	.....
	Greenville	Woodside Cotton Mills	1902	600,000	540,000	411,413	45,120	1,100	6,000	600,000	500	1,200	110	300	1,200	.....	8,000	200	*100,000
Greenwood	Greenwood	Greenwood Cotton Mills	1889	282,300	.....	282,300	22,000	684	5,500	400,000	350	500	*40	*140	.....	10,000	.....	.....	.....
	Greenwood	Grendel Mills	1897	350,000	385,000	385,000	33,152	834	6,250	750,000	400	750	75	175	.....	1,000	.....	.....	.....
	Ninety-Six	Ninety-Six Cotton Mills	1902	200,000	180,000	180,000	20,608	472	2,476	235,000	150	300	35	85	.....	700	.....	.....	.....
	Ware Shoals	Ware Shoals Mfg. Co.	1902	1,000,000	800,000	800,000	50,000	1,400	12,000	1,500,000	600	2,500	50	400	5,000	300	.....	.....	.....
Kershaw	Camden	Hermitage Cotton Mills	1905	150,000	90,000	150,000	16,224	300	1,800	190,000	225	*150	36	76	195	216	.....	.....	.....
	Camden	Pine Creek Mfg. Co.	....	300,000	180,000	250,000	18,816	468	3,000	300,000	240	700	36	118	.....	650	.....	.....	.....
Lancaster	Lancaster	Lancaster Cotton Mills	1895	1,000,000	782,600	782,600	74,188	1,578	13,000	1,400,000	1,050	2,100	140	300	.....	2,500	.....	.....	.....
Laurens	Goldville	Banna Manufacturing Co.	1907	50,000	50,000	50,000	6,628	.....	1,200	120,000	100	350	15	50	.....	225	.....	.....	.....
	Clinton	Clinton Cotton Mills	1896	200,000	300,000	300,000	36,000	900	3,000	500,000	480	1,000	96	300	.....	1,000	.....	.....	.....
	Laurens	Laurens Cotton Mills	1895	350,000	525,000	577,500	44,832	1,290	5,000	504,573	500	1,000	100	500	.....	1,300	44,800	1,208	.....

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COTTON MILLS IN SOUTH CAROLINA—1907.—Con.

Counties.	Location.	Name.	Date of Organization.	Capital Stock—Par Value.	Capital Stock—Market Value.	Actual Value.	Spindles.	Looms.	Cotton Consumed.	Yearly Product.	Actual Employes.	Mil. Population.	Children Under 16.	Children in Village.	Horse-power—Water Inc. Electric.	Horse-power—Steam Inc. Elec.	Enlargements. Spindles.	Enlargements. Looms.	Cost Enlargement.
Laurens. . . .	Clinton. . . .	Lydia Cotton Mills. .	1902	$120,000	$96,000	$96,000	21,972	488	2,500	$400,000	300	1,000	25	500	.....	600	5,000	50	.....
	Laurens. . . .	Watts Mills.	1903	300,000	300,000	300,000	40,320	940	2,400	500,000	400	1,000	50	400	.....	1,000	.....	.....	.....
Lexington. . .	Lexington. . .	Lexington Mfg. Co. .	1890	100,000	75,000	75,000	7,104	204	3,120	300,000	150	450	20	53	140	240	.....	.....	.....
	Batesburg. . .	Middleburg Mills. .	1899	75,000	87,500	75,000	9,728	300	2,900	275,000	225	500	63	170	.....	375	.....	.....	.....
	Irene.	Saxe-Gotha Mills. .	1895	87,500	62,500	62,500	10,000	240	1,500	150,000	175	250	20	60	50	250	5,000	.....	$60,000
Marion.	Dillon. . . .	Dillon Cotton Mills. .	1900	147,500	110,625	110,625	8,864	.....	2,500	200,000	150	400	25	125	.....	*300	5,000	.....	100,000
	Hamer. . . .	Hamer Cotton Mills. .	1904	100,000	.....	95,000	8,192	.....	1,500	161,315	120	250	40	85	.....	300	3,500	.....	*75,000
	Dillon. . . .	Maple Cotton Mills. .	1908	98,300	88,470	100,000	18,864	.....	4,000	400,000	350	550	25	125	.....	*480	5,000	.....	100,000
	Marion. . . .	Marion Mfg. Co. . .	1905	75,500	.....	75,500	7,168	.....	1,800	159,850	100	400	30	250	.....	270	.....	.....	.....
Marlboro. . .	McColl. . . .	Marlboro Cotton Mills. .	1903	963,800	771,040	793,016	49,000	.....	13,000	1,300,000	837	2,200	132	400	.....	1,600	.....	.....	.....
	Red Bluff. . .	Octorara Mills Co. .	190	30,000	.....	30,000	4,500	.....	800	80,000	48	125	16	78	250	150	1,500	.....	.....
Newberry. . .	Newberry. . .	Ashley Mfg. Co. . .	1906	30,000	30,000	30,000	.....	.....	.....	50,000	55	55	12	20	.....	25	.....	.....	.....
	Whitmire. . .	Glenn-Lowry Mfg. Co. .	1900	500,000	500,000	500,000	33,000	900	5,000	500,000	400	1,000	110	500	.....	1,200	.....	.....	.....
	Newberry. . .	Mollohon Mfg. Co. . .	1901	400,000	400,000	400,000	29,952	736	3,600	500,000	400	800	100	300	.....	1,100	2,100	64	25,000
	Newberry. . .	Newberry Cotton Mills. .	1888	400,000	480,000	480,000	28,000	900	15,500	1,350,000	600	1,000	125	300	.....	1,400	.....	.....	.....
Oconee.	Westminster. .	Cheswell Cotton Mills. .	1889	161,600	126,600	126,000	10,262	362	4,911	375,381	230	492	64	156	.....	447	.....	.....	.....
	Westminster. .	Southern Shuttle and Bobbin Co. .	....	50,000	.....	.....	.....	.....	.....	.....	60	150	.....	.....	.....	.....	.....	.....	.....
	Newry.	Courtenay Mfg. Co. . .	1893	300,000	300,000	300,000	23,136	648	4,000	480,000	400	1,100	80	250	900	700	.....	.....	.....
	Newry.	Oconee Knitting Mills. .	1907	30,000	30,000	30,000	.....	.....	.....	45,000	60	50	15	36	.....	40	.....	.....	15,000
	Seneca.	Seneca Cotton Mills. .	1902	316,500	158,750	202,000	17,280	456	3,000	250,000	275	700	20	195	.....	625	.....	.....	.....
	Westminster. .	Southern Shuttle and Bobbin Co. .	1895	50,000	.....	15,150	.....	.....	.....	50,000	60	150	3	60	.....	50	.....	.....	.....
	Walhalla. . .	Walhalla Cotton Mills. .	1896	176,000	146,000	146,000	15,000	510	3,600	400,000	275	500	35	215	.....	500	.....	.....	.....
	Westminster. .	Westminster Knitting Mills. .	1904	40,000	10,000	15,000	.....	.....	.....	35,000	55	150	30	75	.....	35	.....	.....	.....
Orangeburg. .	Orangeburg. .	Orange Cotton Mills. .	1904	75,000	56,250	75,000	5,000	.....	3,600	250,000	125	400	5	200	.....	225	.....	.....	.....
	Orangeburg. .	Orangeburg Mfg. Co. .	1900	200,000	.....	200,000	14,000	400	3,000	360,000	200	230	23	40	.....	300	14,000	400	.....
Pickens. . . .	Liberty. . . .	Calumet Mfg. Co. . .	1904	69,800	60,800	69,800	8,100	.....	900	112,000	125	200	17	36	.....	*300	.....	.....	.....
	Easley.	Easley Cotton Mills. .	1899	365,000	454,725	454,720	37,744	1,020	8,500	960,000	570	1,100	40	500	.....	1,400	.....	.....	.....
	Easley.	Glenwood Cotton Mills. .	1902	239,800	275,770	275,770	22,336	568	3,300	375,000	300	700	30	220	.....	350	.....	.....	.....
	Central. . . .	Isequeena Mills. . . .	1908	200,000	160,000	160,000	11,500	350	1,680	*400,000	140	400	20	75	.....	400	.....	.....	.....
	Liberty. . . .	Liberty Cotton Mills. .	1900	136,000	127,400	136,000	9,750	286	1,200	150,000	225	600	25	100	.....	300	2,500	.....	12,000
	Cateechee. . .	Norris Cotton Mills. .	1895	249,700	249,700	249,700	18,288	452	2,000	275,000	200	600	40	200	900	.....	.....	.....	.....
	Pickens. . . .	Pickens Cotton Mills. .	1906	250,000	.....	215,000	15,000	432	4,700	*250,000	250	*600	*35	*200	.....	800	.....	.....	.....
Richland. . . .	Columbia. . .	American Press Cloth Co. .	1905	48,000	48,000	48,000	.....	4	.....	100,000	20	.....	.....	.....	20	.....	5,000	.....	*50,000
	Columbia. . .	Capital City Mills. .	1900	298,600	195,758	198,000	14,996	300	840	200,000	150	500	25	150	400	.....	.....	.....	.....
	Columbia. . .	Columbia Mills Co. .	1893	700,000	.....	959,160	80,740	498	20,000	1,750,000	1,200	3,000	200	900	1,800	.....	.....	.....	.....
	Columbia. . .	Granby Mills. . . .	1896	1,363,300	716,545	700,000	57,000	1,542	6,500	700,000	550	1,000	97	300	1,700	500	.....	.....	.....
	Columbia. . .	Olympia Cotton Mills. .	1900	2,743,300	1,193,545	1,250,000	100,230	2,250	12,000	1,240,000	1,000	1,500	101	311	.....	3,500	.....	.....	.....

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TYPE OF MODERN MILL.

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COTTON MILLS IN SOUTH CAROLINA—1907.—Con.

Counties.	Location.	Name.	Date of Organization.	Capital Stock—Par Value.	Capital Stock—Market Value.	Actual Value.	Spindles.	Looms.	Cotton Consumed.	Yearly Product.	Actual Employes.	Mill Population.	Children Under 16.	Children in Village.	Horse-power—Water Inc. Electric.	Horse-power—Steam Inc. Elec.	Enlargements. Spindles.	Enlargements. Looms.	Cost Enlargement.
Richland. . . .	Columbia. . .	Palmetto Cotton Mills. .	1898	$125,000	$56,250	$62,500	8,000	280	1,000	$125,000	125	250	18	40	300	.....	.....	.....	.....
	Columbia. . .	Richland Cotton Mills. .	1895	289,700	107,500	450,000	26,000	720	3,120	590,000	350	1,200	40	300	875	.....	.....	.....	.....
	Columbia. . .	G. H. Tilton & Sons. .	1891	.....	.....	10,000	.....	.....	.....	122,302	275	.....	.....	.....	80	.....	.....	.....	.....
	Columbia. . .	Southern Asceptic Laboratory. .	1907	60,000	.....	.....	.....	.....	2,000	150,000	15	60	.....	.....	.....	.....	.....	.....	.....
	Columbia. . .	The Columbia Water Power Co. .	.....	.....	.....	250,000	.....	.....	.....	.....	.....	.....	.....	.....	6,500	4,000	.....	.....	.....
Spartanburg. .	Arlington. . .	Apalache Mills. .	1902	350,000	262,500	350,000	20,000	500	2,700	345,600	300	800	25	250	1,000	.....	.....	.....	.....
	Spartanburg. .	Arcadia Mills. .	1902	200,000	180,000	180,000	13,624	344	2,000	225,000	150	500	50	175	400	.....	13,624	344	*125,000
	Arkwright. .	Arkwright Mills. .	1896	200,000	224,000	230,000	20,256	604	10,000	500,000	300	741	61	80	.....	700	.....	.....	.....
	Spartanburg. .	Beaumont Mfg. Co. .	1890	260,000	247,000	247,000	20,224	252	8,000	450,000	300	450	60	*85	.....	900	.....	.....	.....
	Landrum. . .	Blue Ridge Hosiery Mills. .	1901	38,000	38,000	38,000	.....	.....	.....	100,000	150	275	60	100	.....	50	.....	.....	.....
	Clifton. . . .	Clifton Mfg. Co. .	1880	1,300,000	1,300,000	1,456,000	86,800	2,660	22,000	1,680,000	1,107	2,185	342	930	4,100	1,600	.....	.....	.....
	Glendale. . .	D. E. Converse Co. .	1889	500,000	575,000	575,000	37,392	1,068	5,500	600,000	375	900	80	215	650	700	.....	.....	.....
	Cowpens. . .	Cowpens Mfg. Co. .	1888	120,000	90,000	90,000	17,000	406	2,750	240,000	200	400	18	100	.....	400	.....	.....	.....
	Spartanburg. .	Crescent Mfg. Co. .	1904	48,600	44,700	50,000	.....	.....	.....	120,000	185	200	40	75	.....	100	.....	.....	.....
	Spartanburg. .	Drayton Mills. .	1902	394,400	394,400	394,400	44,800	904	2,000	500,000	500	1,000	50	300	.....	1,200	.....	.....	.....
	Enoree. . . .	Enoree Mfg. Co. .	1888	700,000	632,000	640,000	36,000	982	10,500	800,000	650	1,600	35	300	1,050	650	.....	.....	.....
	Fingerville. .	Fingerville Mfg. Co. .	1888	50,000	50,000	50,000	9,000	.....	2,400	150,000	200	300	18	50	150	350	.....	.....	.....
	Inman. . . .	Inman Mills. .	1900	295,400	250,860	283,768	19,421	500	2,732	300,214	191	500	54	300	.....	700	19,421	500	*280,000
	Welford. . .	Jordan Mfg. Co. .	1905	25,000	25,000	15,000	.....	36	.....	100,000	25	.....	.....	.....	100	.....	2,000	.....	*5,000
	Cowpens. . .	Mary Louise Mills. .	1900	50,000	.....	50,000	4,352	.....	2,000	150,000	60	150	12	50	.....	200	.....	.....	.....
	Pacolet. . . .	Pacolet Mfg. Co. .	1882	1,000,000	1,750,000	1,050,000	55,684	1,983	25,000	1,250,000	900	2,200	93	600	2,400	500	.....	.....	.....
	Spartanburg. .	Saxon Mills. .	1900	300,000	315,000	315,000	30,464	845	3,500	360,000	425	700	42	150	.....	350	.....	.....	.....
	Spartanburg. .	Spartan Mills. .	1889	1,000,000	1,400,000	1,400,000	85,080	2,590	12,900	1,663,800	900	2,000	127	1,100	.....	3,000	.....	.....	.....
	Tucapau. . .	Tucapau Mills. .	1894	462,100	663,850	663,850	63,744	1,696	9,000	900,000	650	1,400	90	450	2,750	1,100	.....	.....	.....
	Fairmont. . .	Tyger Cotton Mills. .	1902	100,000	50,000	73,750	8,132	256	2,000	150,000	170	400	10	60	1,200	.....	.....	.....	.....
	Valley Falls.	Valley Falls Mfg. Co. .	1899	175,000	50,000	60,000	6,240	156	800	75,000	125	250	5	50	125	250	.....	.....	.....
	Greers. . . .	Victor Mfg. Co. .	1897	671,800	726,520	744,940	59,176	1,427	6,000	867,500	662	1,308	.....	418	.....	1,800	*6,000	.....	15,000
	Whitney. . .	Whitney Mfg. Co. .	1888	350,000	350,000	500,000	20,572	740	9,600	737,737	400	850	*50	*150	215	635	.....	.....	.....
	Woodruff. . .	Woodruff Cotton Mills. .	.....	350,000	437,500	437,500	36,288	810	4,000	453,000	325	600	63	350	.....	1,125	.....	.....	.....
Sumter. . . .	Sumter. . . .	Sumter Cotton Mills. .	1880	42,800	35,000	35,000	4,100	.....	1,430	101,500	80	118	14	35	.....	150	.....	.....	.....
Union. . . .	Union. . . .	Aetna Cotton Mills. .	1901	220,000	163,600	200,000	21,800	500	3,500	400,000	300	1,000	63	157	.....	1,000	.....	.....	.....
	Union. . . .	Excelsior Knitting Mills. .	1896	150,000	150,000	200,000	5,624	.....	1,800	300,000	500	1,000	50	125	.....	300	.....	.....	.....
	Jonesville. .	Jonesville Mfg. Co. .	1908	317,000	317,000	317,000	15,000	240	3,000	500,000	475	600	125	250	.....	600	.....	.....	.....
	Lockhart. . .	Lockhart Mills. .	.....	735,000	669,500	800,000	51,000	1,604	11,000	900,000	750	1,400	60	200	2,000	.....	.....	.....	.....
	Union. . . .	Monarch Cotton Mills. .	1901	400,000	375,000	450,000	41,000	1,000	6,000	800,000	375	1,000	63	500	1,200	.....	.....	.....	.....
	Union. . . .	Union Buffalo Cotton Mills. .	.....	6,250,000	.....	1,023,000	157,000	4,301	30,000	3,080,000	1,700	5,000	100	500	6,000	.....	.....	.....	.....
York.	Rock Hill. .	Aragon Cotton Mills. .	1906	200,000	.....	87,310	10,240	280	2,800	300,000	*275	*325	*50	*85	400	.....	10,240	280	*120,000
	Rock Hill. .	Arcade Cotton Mills. .	1895	98,700	134,000	134,000	12,300	314	2,500	200,000	225	400	47	128	.....	350	.....	.....	.....

*Absorbed by and included in Union Buffalo Cotton Mills.

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COTTON MILLS IN SOUTH CAROLINA—1907.—Con.

Counties.	Location.	Name.	Date of Organization.	Capital Stock—Par Value.	Capital Stock—Market Value.	Actual Value.	Spindles.	Looms.	Cotton Consumed.	Yearly Product.	Actual Employes.	Mill Population.	Children Under 16.	Children in Village.	Horse-power—Water Inc. Electric.	Horse-power—Steam Inc. Elec.	Enlargements. Spindles.	Enlargements. Looms.	Cost Enlargement.
York	Bowling Green	Bowling Green Knitting Mills	....	$14,700	.....	$14,700	.....	.....	.....	$40,000	30	100	2	60	.....	40	.....	.....	.....
Clover	Clover	Clover Cotton Mills	1890	200,000	250,000	250,000	20,000	.....	1,000	500,000	275	600	40	200	600	.....	.....	.....	.....
Fort Mill	Fort Mill	Fort Mill Mfg. Co.	1887	200,000	200,000	200,000	10,064	422	2,000	300,000	275	225	50	85	450	.....	.....	.....	.....
Rock Hill	Rock Hill	Highland Park Mfg. Co.	1898	645,100	645,100	153,100	8,192	296	2,250	350,000	350	1,500	50	500	415	.....	.....	.....	.....
Fort Mill	Fort Mill	Millfort Mill Co.	1894	92,700	56,500	74,600	10,026	490	1,800	200,000	200	350	46	68	350	.....	.....	.....	.....
Rock Hill	Rock Hill	Manchester Cotton Mills	1895	238,500	228,960	238,500	18,192	300	3,000	275,000	350	675	100	200	400	225	.....	.....	.....
Yorkville	Yorkville	Neeley Mfg. Co.	1905	60,000	60,000	60,000	3,500	.....	3,000	700,000	70	100	8	20	140	.....	2,600	.....	$35,000
Rock Hill	Rock Hill	Victoria Cotton Mills	1898	100,000	100,000	97,000	11,456	300	1,800	160,000	300	400	20	75	450	.....	.....	.....	.....
Yorkville	Yorkville	Tavora Cotton Mills	1901	40,500	30,875	30,875	5,000	.....	1,080	100,000	60	200	13	100	125	.....	.....	.....	.....
Yorkville	Yorkville	York Cotton Mills	1896	150,000	75,000	150,000	13,264	.....	1,800	225,000	225	400	42	125	.....	525	.....	.....	.....
York	Rock Hill	Hamilton-Carhartt Cotton Mills	1907	500,000	.....	500,000	8,000	202	2,000	300,000	125	200	15	50	.....	600	8,000	202	200,000

†Absorbed by and included in report Hamilton Carhartt Cotton Mills.

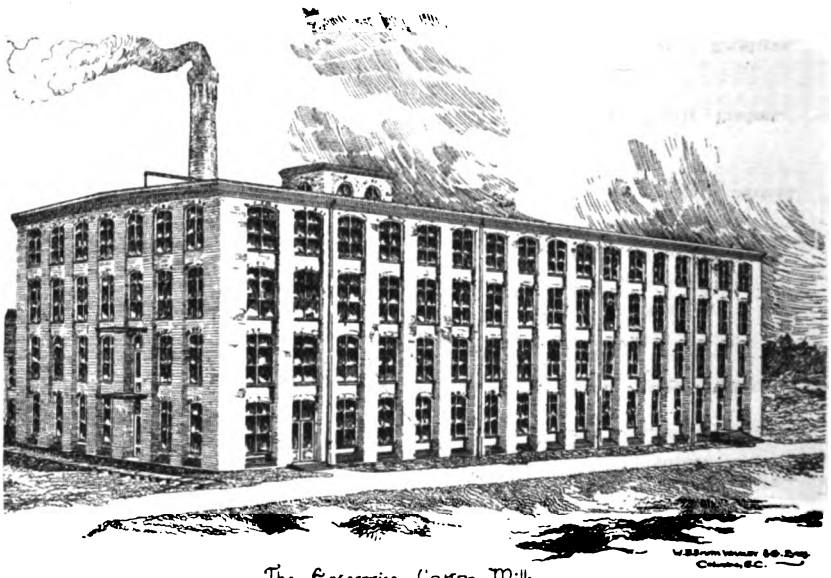
NOTE.—For totals see Table "Summary of South Carolina Textile Industry."

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1908 Increases to August 1, and Proposed Enlargements.

The following shows the actual increases of capital during 1908 of existing mills:

	From	To
Anderson Cotton Mills, Anderson	$ 600,000	$ 800,000
Fountain Inn Mfg Co., Fountain Inn	200,000	300,000
McGee Mfg. Co., Greenville	100,000	175,000
Carolina Mills, Greenville	50,000	200.000
Springstein Mills, Chester	100,000	500,000
Ware Shoals Mfg. Co., Ware Shoals	1,000,000	1,300,000
Oconee Knitting Mills	30,000	50,000
Fort Mill Mfg. Co.	200,000	450,000
Net actual increase of capital of existing plants		$1,495,000



The Enterprise Cotton Mills
Orangeburg, S. C.

So far as the reports have been received an actual increase of 10,000 spindles has been made in the above mills.

The latest new mill to be established is the Rikard Knitting Mill of Lexington County with a capital of $10,000.

Increases of capital stock in existing mills are proposed for the year 1908 amounting to $200,000, and the new mills being organized have a proposed capital of $310,000.

Among the textile developments and improvements—enlargements, etc.—proposed for the year 1908 are the following:

Newberry Cotton Mills proposes increase from 28,000 to 38,000 spindles, and from 900 looms to 1,200 looms.

Aragon Mills, of York—Proposed to double plant during year, which would mean 20,480 spindles and 560 looms.

Darlington—Proposed new mill of 10,000 spindles and 300 looms.

Pendleton Cotton Mills—Proposed increase of spindles from 3,136 to 11,000.

Cheraw Cotton Mills, Chesterfield County—Proposed new mill of 10,000 spindles and 300 looms.

Calhoun Mills, Calhoun Falls—Proposed increase from 16,000 to 25,000 spindles and from 400 looms to 600 looms.

Lockhart Mills—Proposed increase of 3,000 horsepower of water power.

Greeleyville—Proposed new mill.

Manetta Mills and Highland Cotton Mill—Enlargements contemplated before the end of the year.

Tyger Cotton Mills—Proposed enlargements before end of year.

Wellford—New mill proposed with $300,000 capital.

Spartanburg—Proposed new mill to be known as Crescent Mfg. Co.

Blacksburg—Blacksburg Mills, organized in 1907 with $250,000 capital, almost ready to start with 5,000 spindles and 128 looms, and 70 operatives.

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NEW PLANTS—1907-8.

Counties.	Location.	Name.	Date of Organization.	Capital Stock—Par Value.	Spindles.	Looms.	Cotton Consumed.	Actual Employees.	Horse-power—Water.
Williamsburg	Greeleyville	Greeleyville Cotton Mill	1907	$150,000	10,000	.....	.....	.....	.....
Newberry	Newberry	Highland Cotton Mill	1907	300,000	.....	.....	.....	.....	.....
Aiken	North Augusta	North Augusta Knitting Mills	1907	6,000	.....	.....	.....	.....	.....
York	Rock Hill	Wymojo Yarn Mills	1907	150,000	5,000	.....	3,600	.....	.....
Cherokee	Blacksburg	Blacksburg Mills	1907	250,000	5,000	128	.....	70	.....
Chesterfield	Cheraw	The Cheraw Cotton Mills	1907	150,000	10,000	300	.....	.....	.....
Union	Union	Mishna Mills	1907	300,000	15,000	450	.....	.....	.....
York	Rock Hill	Acme Manufacturing Company	1907	5,000	.....	.....	.....	.....	.....
Spartanburg	Woodruff	W. S. Gray Cotton Mills	1907	160,000	10,000	.....	.....	.....	.....
Lexington	Leesville	Leesville Cotton Mill	1907	100,000	.....	.....	.....	.....	.....
York	Yorkville	Lockmore Cotton Mills	1907	100,000	6,500	.....	2,000	.....	200
Cherokee	Gaffney	Merrimac Mills	1907	200,000	10,250	300	.....	.....	.....
Lexington	Chapin	Chapin Manufacturing Company	1907	75,000	3,000	.....	.....	.....	.....
Charleston	Charleston	Charleston Waste Mill	1907	200,000	.....	.....	.....	500	.....
Cherokee	Blacksburg	Whittaker Cotton Mills	1907	*150,000	10,000	.....	.....	.....	.....
Spartanburg	Spartanburg	New Mill (John B. Cleveland)	1907	*150,000	10,000	.....	.....	.....	.....
Greenville	Simpsonville	Simpsonville Cotton Mill	1907	150,000	8,000	200	2,000	150	.....
Cherokee	Gaffney	New Yarn Mill (E. B. Cash)	1907	*150,000	5,000	.....	.....	.....	.....
Spartanburg	Cowpens	New Mill (S. B. Wilkins)	1907	.....	.....	.....	.....	.....	.....
York	Bowling Green	New Yarn Mill (S. H. Smith)	1907	.....	.....	.....	.....	.....	.....
Aiken	Oakwood	New Knitting Mill (C. E. Hallman)	1907	.....	.....	.....	.....	.....	.....
Aiken	Aiken	New Hosiery Mill (S. Harvin)	1907	.....	.....	.....	.....	.....	.....
Aiken	Aiken	New Knitting Mill (J. W. Ashhurst)	1907	.....	.....	.....	.....	.....	.....
Aiken	Montmorenci	New Knitting Mill	1907	.....	.....	.....	.....	.....	.....
		Total	.....	$2746,000	107,750	.....	.....	.....	.....

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CAPITAL CITY MILLS.

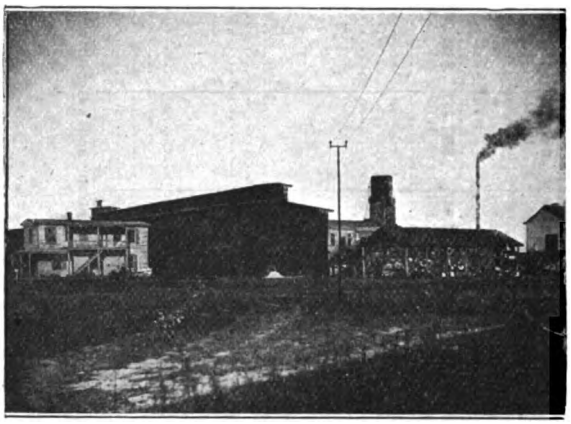
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SUMMARY OF SOUTH CAROLINA TEXTILE INDUSTRY.

	1908. (To Aug. 1)	1907.	1905.	1900.	1890.	1880.	1870.	1860.	1850.	1840.
Number of Establishments	182	179	.....	.....	.....	.....	.....	.....	.....	.....
Number of Corporations	162	150	127	80	34	14	12	17	18	15
Total Capital Invested in Textiles	$105,826,919	$103,821,919	$82,387,429	$39,258,946	$11,141,833	$2,776,100	$1,337,000	$901,825	$857,200	$617,450
Capital Stock, Par Value	56,992,050	54,987,450	36,988,766	17,885,200	.....	.....	.....	.....	.....	.....
Capital Stock, Actual Value	50,682,234	48,677,234	.....	.....	.....	.....	.....	.....	.....	.....
Number of Spindles	3,776,981	3,638,761	2,864,092	1,481,349	332,784	82,334	39,897	41,884	.....	47,984
Number of Looms	92,744	90,177	.....	42,663	.....	.....	.....	.....	.....	.....
Bales of Cotton Consumed Annually	793,396	774,905	555,467	485,024	123,342	33,624	.....	.....	.....	.....
Value of Product Annually	$77,010,419	$75,455,019	$49,437,644	$29,723,919	$9,563,443	$2,554,482	$1,345,052	$1,046,047	$831,342	$438,900
Number of Employees	56,223	54,887	37,271	30,201	8,071	2,018	1,123	891	1,019	570
Total Mill Village Population	.....	126,288	86,966	61,468	18,479	.....	.....	.....	.....	.....
Number Children Employed (Under 16 Years)	.....	8,121	8,835	8,110	2,152	585	326	.....	.....	.....
Number Children in Village	.....	35,365	.....	.....	.....	.....	.....	.....	.....	.....
Horse Power, Water†	.....	71,675	†29,568	.....	.....	.....	.....	.....	.....	.....
Horse Power, Steam	.....	106,548	†96,842	.....	.....	.....	.....	.....	.....	.....
CONTEMPLATED OR PROGRESSING ENLARGEMENTS—1907.										
Total Amount Expended Therefor	.....	$2,170,500	.....	.....	.....	.....	.....	.....	.....	.....
Number of Spindles	.....	206,285	.....	.....	.....	.....	.....	.....	.....	.....
Number of Looms	.....	4,918	.....	.....	.....	.....	.....	.....	.....	.....
NEW PLANTS—1907.										
Number of Plants	.....	18	.....	.....	.....	.....	.....	.....	.....	.....
Capital	.....	$2,746,000	.....	.....	.....	.....	.....	.....	.....	.....
Spindles	.....	94,634	.....	.....	.....	.....	.....	.....	.....	.....
Looms	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

*Value by State Board. †Total horse power employed, 156,117. The amount not stated in table being accredited to electric motors, both steam and water driven. †44,557,299 in 1906.

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Special Manufacturing

Loom-Reed and Harness Works.—The Andrews Loom-Reed and Harness Works, at Spartanburg, manufactures reeds, slasher combs and loom harnesses. This is the only loom-harness factory in the South, and the business extends throughout the Southern States. About 35 people are employed, with an average pay-roll of $10,000 per annum. The capital stock is $23,000.

Only Plant of its Kind in the South.—The Excelsior Knitting Mills, of Union, was organized in 1896, with Emslie Nicholson president and J. H. Gault treasurer and manager, and commenced operations in the spring of 1897 with fifteen knitting machines and auxiliary machinery. This has been increased from time to time to 267 knitting machines and a dye plant; a box-making plant and spinning machinery have also been added until now the equipment enables this plant to take a bale of cotton and turn out the finished hosiery in paper boxes in cases, all of its own manufacture. Their product—which averages 15,000 to 18,000 pairs per day—is distributed in every State of the Union, and shipped to a good many foreign countries. The goods are always sold for months ahead, showing the esteem in which they are held. The same officers who were originally elected are still in charge, and have made this plant, which is one of the largest of its kind in the country, eminently successful. Five hundred hands are employed in the various departments of this mill.

Bleachery.—The Union Bleaching and Finishing Company, of Greenville, was organized in 1902 with an authorized capital of $300,000, which is now fully paid. At first the company was owned by wealthy capitalists of New York City, who predominated in the affairs of the American Tobacco Company, such as Duke, Fuller, and Thomas F. Ryan. Since President Arrington took charge of its affairs three years ago, an interest in the company has been sold to the largest Southern cotton manufacturing interests, which interests now predominate in the management. It was thought there was a great need for such a plant in the South to finish some of the many millions of yards of goods that have been for years shipped to New England for that purpose. The readiness with which the trade in these lines is taking hold of this business indicates that there was no mistaken judgment in that respect; its location in the heart of the section of the manufacturing of goods that are finished into bleached cottons, is considered ideal. The amount of help necessary to operate a plant of this size is nothing like so great as for a cotton mill of the same capital. There are employed at this time about 60 operatives, with a capacity for finishing about 100,000 yards of cloth per day. The owners feel that this class of work is most natural to the South, and on that account will have a rapid and steady development.

Only One in the South.—The Southern Shuttle and Bobbin Company, of Westminster, with $50,000 capital, is the only factory making shuttles to be found south of Philadelphia. The company manufactures, also, warper and twister spools, skewers, scavenger rolls and loom swells. About 53 persons are employed, to whom $14,000 annually is paid in salaries, and the value of the annual product is about $60,000.

Manufacture of Table Damask.—The Irene Mills, of Gaffney, a close corporation owned by Mr. H. D. Wheat, was organized in December, 1905, with

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a capital stock of $50,000. It is the only mill in the State or Southern States making high-grade table damask; its product is sold in competition with New England and imported Irish linens. Few people of the State know that such beautiful high-class table coverings are made within its borders. The mill is a model of its kind, the well-kept yards and park surrounding the mill make it a desirable place for mill operatives to work. None but native help are employed in or about the mill, and higher wages are paid than in ordinary cotton mills, some of the young men making as much as $60 per month. The weaving of this class of work is very difficult, but the best of the native help soon learn the art. The mill has been very successful since it started, and the owners are now increasing its capacity.

Saw Mills.—South Carolina is one of the leading Southern States in the saw mill industry. This State was operating, in 1905, 205 mills with an average cut of 2,275,000 feet. Indeed, several of the best saw mill plants in this country are located in South Carolina, the largest of all of them being the great plant at Georgetown. South Carolina heads the list of all States in the Union in the matter of kiln-dried lumber. The proportion of the lumber cut in this State that is kiln-dried by the manufacturers is 51.3 per cent., the next largest percentage in this regard being in North Carolina, where it is 36.5. The large amount of pine that is kiln-dried is due to the fact that the shipping weight of the lumber so treated is considerably reduced. This is especially true of the loblolly pine. Only 25.6 per cent. of the lumber cut in this State is surfaced at the mills. It is noteworthy that the mills in South Carolina sold a total of 33,415 cords of slab wood, which averaged not less than $1.00 per cord. The percentage of saw logs cut from the holdings of the saw mill operators is 88.4, which indicates that the saw mill operators in South Carolina are in a prosperous condition and are able to care for the forests from which they draw their supply. Several of the larger saw mill plants of the State have an annual output of upwards of a half million dollars and one plant on the coast pays annually $200,000 in wages alone.

Woolen Blankets.—On the outskirts of the city of Greenville stands the only woolen mill in the State of South Carolina. It is the plant of the McGee Manufacturing Company. Erectors of woolen mill machinery, whose privilege it is to travel from coast to coast have pronounced the mill the acme of woolen mill construction and equipment. There is, perhaps, not another mill of similar size and of the latest and most modern construction wherein there have been incorporated so many of the best and most progressive ideas. The mill, which is of brick construction, is 275x62, two stories in height, and has a dyehouse 60x40 in dimensions. The advantages of light, ventilation, etc., are some of the noticeable features of the building, which has been built with a view to being added to, if the future should demand it, without making any radical changes necessary. Among the conveniences of the building may be mentioned a good elevator, a superintendent's office, and a splendid system of electric lighting. The equipment in the mill consists of six sets of Davis & Furber 60-inch cards; 8 Davis & Furber mules; 44 92-inch Crompton & Knowles fancy cassimere looms, and a most complete dyeing and finishing plant for blankets, dress goods and cassimeres, the machinery installed for the proper accomplishment of this work being extensive. The motive power is steam. In addition to the mill building may be mentioned two storage houses with dimensions of 60x100 each. The mill village consists of 20 modern cottages, one superintendent's house, and two for the homes of overseers. Aside from the equipment, a notable feature in this mill is the system introduced for the handling of raw stock from one process to another until it emerges into a finished woolen blanket. This system, which is easily far ahead of the average, is the brain work of one of the best known woolen mill men in this country, who had his thorough and practical schooling years ago in the English mills of woolen manufacturing.

With a full line of samples, the McGee Manufacturing Company is in a position to offer the trade something worth while in the way of cotton warp and woolen blankets, in plain and fancy weaves, from 70 cents to $1.50 per pound. The company will also manufacture slasher cloth for cotton mills, 60, 62, 64 inches wide, 18 ounces to the yard, at 85 cents per pound.

Blankets manufactured in one month after this mill was started won first prize and a gold medal at the Jamestown Exposition in 1907.

Tanneries.—In the town of Bennettsville is located the only tannery of any size in this State, owned by P. A. Hodges, and tans 175 sides of leather per day when running on full time, and employs 30 or 40 men at $1 to $3 per day, and manufactures a nice grade of harness out of the leather tanned. There are two other small tanneries in this State—one near Wellford, Spartanburg County, owned by J. R. Frey, and another at Prosperity, owned by J. W. Wise.

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Lime Plant.—The only two lime plants in the State are those of the Gaffney Lime Company and Carroll & Company, lessees, the first controlled by Carroll & Company, lessees. The first plant has a capital stock of $25,000, and there are 25 employees, averaging $1 per day. The average cost of the crude material is 50 cents per barrel. The gross value of products is $36,000, and the net profits are about $3,600. Carroll & Company, of Gaffney, have a capital of $40,000, with 40 wage-earners, averaging $1 per day; cost of material used 50 cents per barrel; gross value of products $45,000, and net profits of about $7,500.

Old Bagging Used.—The Enterprise Manufacturing Company, of Rock Hill, is a company operating a plant for the purpose of taking old jute cotton bagging and converting it into new bagging. It has a capacity of one million yards annually. There are two other such plants in the State, both in Charleston.

In Rock Hill, also, a new broom factory has just commenced operations, and the Acme Manufacturing Company has recently commenced the manufacture of suspenders.

Novelties.—In Columbia there is an aseptic laboratory.

In Columbia, also, is the American Press Cloth Company's plant, manufacturing goods that require much wool. This plant is the only one of its kind in the State, and is doing a fine business.

Metal Workers.—During this year there was established in Columbia a metal working establishment. The people to operate this plant were brought by the Department of Agriculture, Commerce and Immigration from Louisville, Ky., and beyond. The plant began to do a first-rate business from the first, and it has steadily grown.

Telephone Manufacturing.—In Sumter is located the splendid plant of the Sumter Telephone Manufacturing Company, and it is one of the model industrial establishments of the South. The industry was begun in a modest way, but great attention was given to care and detail. Although about ten months ago a new wing was added to the factory, it is now necessary to make other enlargements. Every part used in the manufacture of telephones and switchboards is made in the factory from raw materials. Automatic machinery is almost entirely used to make the numerous small parts that enter into telephones. Instruments and switchboards of the most improved type, for both long distance and local exchange and farm service, are made. Telephones and switchboards made in this factory are now used throughout the United States, Canada and Mexico, the United States Government being included among the many customers of the management. Only recently a large order from the Federal Government was filled with telephones for use of the army corps now in Cuba. The main factory covers about 230,000 square feet of floor space, without reference to the drying kilns and other buildings, which would run this space up to 400,000 square feet. Hundreds of men, boys and girls are employed in the factory. The factory has agencies in all parts of this country and in many foreign countries. When Mr. C. T. Mason started the industry his shop was not as large as the present stock room.

Manufacture of Carriages and Wagons.—No great headway has been made in South Carolina in the manufacture of carriages and wagons, as the accompanying figures show. The manufacture of vehicles has been confined almost entirely to family and pleasure carriages, 7,440 being built; and to wagons, 1,569 being home-made. About $150,000 worth of repair work was also done.

	1905.	1900.
Number of establishments..	38	56
Capital	$502,243	$313,698
Cost of materials..	289,740	206,414
Value of products	548,226	414,052

Railroad Repair Shops.—In this State there are steam railroad repair shops turning out work annually worth over a million dollars. They employ something over 1,000 men. These figures show this industry:

	1905.	1900.	1890.
Number of establishments	8	6	5
Capital	$ 299,923	$354,642	$420,859
Cost of materials	432,945	294,334	691,361
Wages	577,191	363,041	394,411
Value of products	1,080,990	691,361	688,191

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Farming Implements.—There has been no material changes in the manufacturing of farming implements within the last five years. The accompanying table shows that while the number of plants have not been increased, and the average number of wage-earners remains the same, the output's value is over double. It was less than a decade ago when South Carolina farmers were purchasing practically all agricultural implements from Eastern and Middle Western factories.

FARMING IMPLEMENTS MANUFACTURING.

	1900.	1905.
Number of establishments	5	4
Capital	$14,575	$13,351
Cost of materials	5,374	12,635
Amount paid in wages	2,606	4,065
Average number of wage-earners	10	12
Value of product	$14,090	$34,932

These factories, besides manufacturing seeders, drills, planters and implements of cultivation, turn out over 30,000 other miscellaneous articles for general agriculture. Their repair work amounts to $800, showing a total income of over $35,000.

KINDS AND VALUE OF PRODUCTS, 1905.

Seeders and planters	$ 3,215
Implements of cultivation	192
Drills	260
All other products	10,725
Miscellaneous	20,000
Repair work	800
Value of products	34,932

The Steam Power used in the State is a sure indication of the State's manufacturing importance. South Carolina shows a wonderful change with the remarkable increase of 177.9 per cent. from 1890 to 1900, with the healthy increase of 94.6 per cent. from 1900 to 1905. This does not take into consideration the steam power utilized by grist mills, saw mills and cotton gins throughout the State. The addition of 76,519 horse power in five years, almost doubling the power of 1900, is evidence of the great number of new industries that have been organized.

ELECTRIC POWER.

1905	32,162
1900	6,061
1890	8

STEAM POWER.

1905	157,432
1900	80,913
1890	29,117
1880	11,995
1870	4,537

WATER POWER.

1905	31,097
1900	27,586
1890	16,399
1880	13,873
1870	10,395

The Water Power of South Carolina in 1905 shows 31,097, most of which is consumed by its most important manufacturing branch—the cotton mills. Its most rapid increase was between 1890 and 1900, showing an increase of 11,187, or 68.2 per cent. However, the recent account, taken in the fall of 1907, proves a phenomenal increase of over 71,000 water power used by cotton mills alone, or over 100 per cent. increase in less than two years.

Electric Power.—The accompanying table is eloquent of the increase of generated electric power of South Carolina. There are so many industries, large and small, that rely on rented power that the vast heretofore wasted water power of the State is being rapidly harnessed for transmission to distant factories.

Clay Ware.—In the manufacture of clay products South Carolina has increased the capital invested from $366,711 in the 86 plants in 1900 to $614,347 invested in 53 plants in 1905. About a quarter of a million dollars is paid out annually in wages to over a thousand employees, and the value of products annually has increased from $596,693 in 1900 to $697,047 in 1905. These figures refer entirely to manufactured clay products, such as brick, tile, terra-cotta and pottery of all kinds. The aggregate value of the brick manufactured in 1905 was $684,847, representing 126,602,000 brick. All the pottery manufactured was stone ware, worth $11,500.

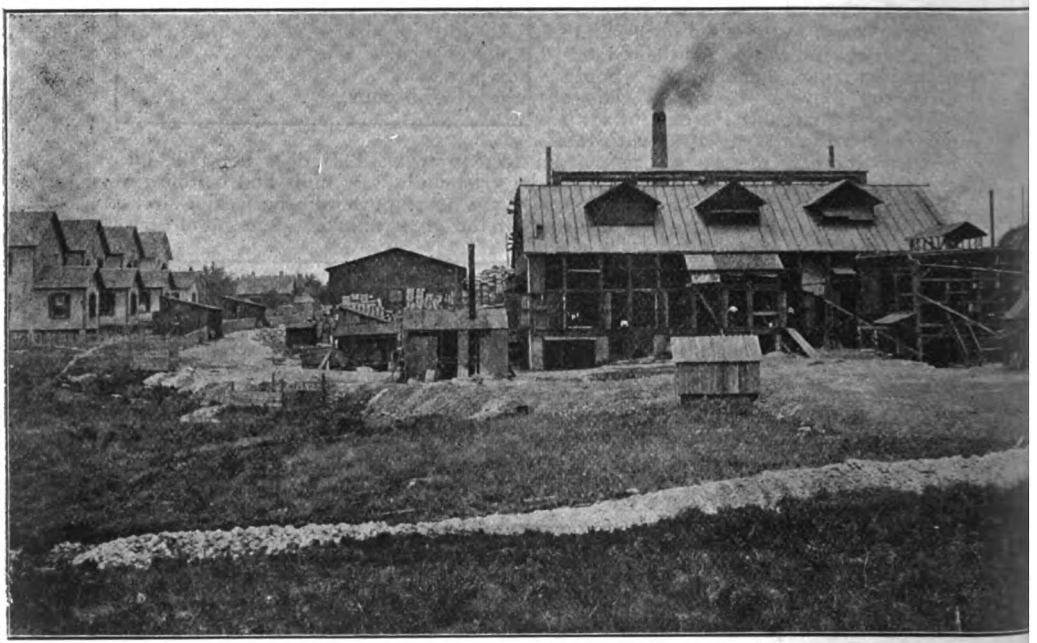
Flour and Grist Mills.—The flouring and grist mills of South Carolina in 1900 converted into flour 1,000,964 bushels of wheat and into meal 1,861,093 bushels of corn. There were at that time 564 mills in operation in the State, having a total capital of $652,553 and employing 281 persons. The wheat converted by these mills was worth $891,161 and the corn $988,889; $400,036 worth of rye was also ground, as was $1,430 worth of barley. The total value of the product was $2,347,790, represented in part by 204,089 barrels of flour worth $999,781 and

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447,299 pounds of corn meal worth $1,079,008. The value of the rye flour was $4,253; the hominy produced amounted to 3,248,984 pounds, worth $40,521.

In the manufacture of flour and grist mill products South Carolina had, in 1905, 29 establishments, with a capital of $205,619, using 258,438 bushels of wheat, worth $279,874, and $353,420 worth of other materials, including 483,062 bushels of corn. The total value of the products was $725,222, of which 53,150 barrels was wheat flour, worth $292,490. There were 26 establishments in 1900 using $733,898 dollars' worth, or 524,347 bushels of wheat costing $457,946, and 453,241 bushels of corn worth $221,106. The corn meal produced in 1905 was 113,622 barrels worth $314,257, against 88,791 barrels in 1900 worth $204,183. Of hominy and grits, 2,330,160 pounds were produced in 1905, against 1,305,250 pounds in 1900.

Glass Manufacturing.—Since the census of 1900 South Carolina has taken a place among the 21 States in which glass is manufactured, ranking, in 1905, sixteenth. There is only one factory in the State, the Carolina Glass Works, located at Columbia. The factory makes only bottles. The capital is $60,000, the plant is worth $50,000, it employs 48 blowers and 200 other persons, pays out $100,000 annually in wages, and the annual value of the product is $220,000. South Carolina glass sand is used.



THE GLASS FACTORY.

Canning and Preserving, including Oysters.—South Carolina's canning industry—canning and preserving fruits and vegetables, fish and oysters—has grown rapidly since 1900, though the number of plants was the same in 1905. The capital invested increased from $35,626 to $202,319, the number of employees from 1,380 to 13,540, the wages from $13,134 to $111,778, the cost of materials used from $26,190 to $349,359, and the total value of products from $50,665 to $574,479. The most noteworthy increase was in the oyster canning industry, the products of which were valued in 1900 at $18,500; in 1905 these products amounted to $529,511. The South Carolina oyster is specially well adapted in flavor and other qualities for canning purposes. There are only five plants canning and preserving fruits and vegetables, and there are excellent opportunities for those who desire to engage in this industry. The capital invested in the nine oyster factories in 1905 was $199,779, and 1,032 employees earn annually $110,734, using $345,870 worth of materials and turning out an annual production

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of $568,239. South Carolina now ranks second in the United States in the oyster canning industry, her rank being sixth in 1900. The average number of cases is 192,733. Clams and shrimp also enter into the industry.

Veneer.—The Clement-Ross Manufacturing Company, of Cheraw, has a plant that produces a fine article of rotary cut veneer from poplar wood. After boiling or steaming the wood, by a simple device the wood is sliced in thin sheets that are used for manufacturing boxes of various kinds, and so far it has been a paying investment. The capital is $21,000, and the gross value of products is between $40,000 and $50,000. The net profits are about 30 per cent.

Boat Oars.—The Georgetown Boat Oar Company, of Cheraw, is a branch of the same company of Georgetown, S. C., and manufactures a prime article and large quantities of boat ores from ash wood, and in lengths of from 5 to 25 feet.

Buggy Manufacturing.—All over the South the output of the Rock Hill Buggy Company, of Rock Hill, is known. This company turns out high-class buggies. It has a capital of $25,000, with an average number of 125 wage-earners, who are paid $42,000. About $250,000 worth of materials are used, and the gross value of products is $350,000 annually.

Silverware.—There is a plant at Hartsville, Darlington County, for the manufacture of silverware. This factory makes all kinds of silverware, and is unique in the South.

Paper Pulp.—At Hartsville also is located the Hartsville Paper Mill, which manufactures the paper from wood pulp.

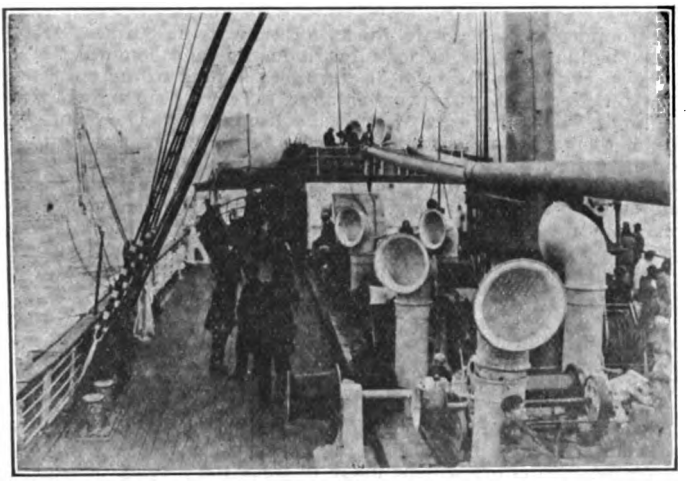
Diversified Industries.—In addition to the diversified lines referred to, there are many other which are paying handsome returns. In Charleston a pickle factory is getting splendid results using native raised cucumbers and other products; in Anderson are overall and such factories; mattress and spring bed, furniture, shirt, pants and other factories are found here and there. But the small industries are just beginning to receive attention. In another year or two development along this line may be expected at a rapid rate.

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TABLE 3.—SUMMARY OF ALL MANUFACTURES—1905.

	Number of Establishments.	Capital.	Salaried Officials, Clerks, Etc.		Wage-Earners and Wages.					Miscellaneous Expenses.	Cost of Materials Used.	Value of Products, Including Custom Work and Repairing.
					Total.		Average Number.					
			Number.	Salaries.	Average Number.	Wages.	Men 16 Years and Over.	Women 16 Years and Over.	Children under 16 Years.			
Agricultural Implements	4	$13,351	.....	.....	12	$4,065	12	.....	.....	$6,794	$12,635	$34,932
Boxes, Wooden, Packing	3	8,856	.....	.....	11	1,902	6	1	4	398	2,911	8,601
Bread and other Bakery Products	52	277,878	29	$18,937	311	99,271	242	39	30	15,971	370,235	617,965
Brick and Tile	47	516,909	36	29,072	875	184,292	851	.....	24	42,034	177,268	655,831
Canning and Preserving Fruits and Veg.	5	2,540	.....	.....	10	1,044	3	6	1	233	3,489	6,240
Canning and Preserving Oysters	9	199,779	20	13,540	1,034	110,734	196	595	243	19,812	345,870	568,239
Carriages and Wagons	38	502,243	16	20,480	346	118,280	329	6	11	28,441	289,740	548,226
Car Shops by Steam Ry. Co.'s	8	299,923	91	64,392	131	577,191	1,122	8	1	5,462	432,945	1,080,090
Clothing, Men's	5	53,590	9	4,356	125	25,454	15	105	5	15,528	76,186	136,700
Coffins	3	156,260	12	7,860	92	25,144	89	.....	3	11,728	37,965	126,247
Confectionery	5	16,142	.....	.....	19	4,231	10	8	1	1,802	18,745	30,374
Cooperage	3	100,689	9	11,793	82	18,334	65	.....	17	9,021	67,631	119,084
Coppersmith and Sheet Iron Works	5	23,757	28	21,170	24	14,684	24	.....	.....	3,445	13,411	40,100
Cotton Goods	127	82,337,429	761	1,008,308	37,271	7,701,689	18,279	10,157	8,835	3,229,796	34,308,311	49,437,644
Fertilizers	20	7,086,878	149	153,045	1,071	803,885	1,071	.....	.....	231,137	2,692,031	3,637,576
Flour and Grist Mill Products	29	205,619	14	7,494	60	18,414	60	.....	.....	7,708	633,294	725,222
Foundry and Machine Shops	37	511,339	28	28,771	450	212,113	433	10	7	26,639	171,388	542,059
Furniture	6	162,794	14	10,950	140	45,943	133	.....	7	14,129	118,759	202,168
Gas, Illuminating and Heating	4	1,153,124	16	10,558	108	30,546	108	.....	.....	50,545	58,613	192,337
Hand Stamps	3	2,900	.....	.....	3	1,700	3	.....	.....	1,071	886	5,900
Hosiery and Knit Goods	14	823,822	40	30,333	1,058	186,721	367	430	261	73,864	586,490	1,078,682
Ice Manufactories	18	712,346	25	22,507	111	44,556	110	.....	1	35,240	74,812	243,688
Leather, Tanned, Curried, Etc.	3	17,080	1	200	4	1,296	4	.....	.....	99	6,342	10,822
Liquors, Distilled	6	104,675	5	9,320	46	9,897	46	.....	.....	670,127	255,953	567,947
Lumber and Timber Products	439	7,237,725	301	281,164	9,656	2,578,320	9,599	6	51	791,396	1,617,713	6,791,451
Lumber Planing Mill Products	60	947,186	91	66,130	974	292,321	963	.....	11	61,367	885,372	1,478,581
Mattresses and Spring Beds	5	73,001	7	5,620	59	14,352	51	7	1	6,770	61,395	97,109
Mineral and Soda Waters	35	160,041	20	12,505	135	29,592	116	.....	19	25,383	116,474	206,458
Monuments and Tombstones	8	38,725	3	2,030	39	15,382	38	1	.....	6,362	27,813	67,458
Oil, Cotton Seed and Cake	100	5,177,178	341	232,675	282	320,218	1,281	.....	1	266,556	4,553,470	5,462,818
Patent Medicines and Compounds	3	22,075	10	5,205	4	1,935	3	1	.....	3,161	9,641	20,850
Pottery, Terra Cotta and Fire Clay	6	97,438	6	4,800	88	19,578	81	.....	7	4,784	13,871	41,216
Printing and Publishing (Job)	23	259,066	17	16,310	152	62,013	103	41	8	12,290	68,486	193,606
Printing & Pub. (Newsp. & Periodical)	127	685,510	184	135,443	471	206,474	391	44	36	74,961	145,810	844,401
Rice, Cleaning and Polishing	4	317,394	19	19,400	92	14,949	88	.....	4	16,293	504,657	554,575
Saddlery and Harness	3	27,500	2	450	17	6,200	16	.....	1	910	19,866	37,950
Tobacco (Cigars and Cigarettes)	7	699,296	25	22,874	446	74,113	39	358	49	64,866	108,280	257,078
Turpentine and Rosin	79	91,637	9	4,100	169	37,012	168	.....	1	15,878	373,568	574,150
Wood Distillation (not Including Turpentine and Rosin)	5	44,310	5	2,912	21	4,222	21	.....	.....	2,176	6,809	14,418
Wood, Turned and Carved	6	136,660	8	7,697	162	43,128	160	.....	2	8,678	42,510	105,808

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COMING TO CHARLESTON.

Chapter XII

Commerce, Transportation, and Immigration and Emigration

It is well-nigh impossible to touch the general subject of transportation in South Carolina, which is a matter carrying with it the commerce of the State, and the fullest development of the agricultural industry as well, without reverting from time to time in anything that might be said to the treatment of this matter by W. L. Trenholm, formerly Comptroller of the Currency of the United States, in the Handbook of 1882, and in his address to the Chamber of Commerce of the city of Charleston on the occasion of the Centennial Anniversary of that organization, on February 11, 1884. No South Carolinian ever gave the subject closer study, and certainly none ever viewed the possibilities with more far-seeing eyes. Long before, Mills and others had seen the possibilities and there were earnest, active workers in behalf of transportation development from the earliest days, but each and all of them have always had to fight their way forward, owing to the numbers who would not or could not see the desirable and far-reaching results to be obtained. Investigation of the history of transportation in this State shows Henry Shultz, as early as 1821, advocating and endeavoring by every possible means to open trans-Atlantic navigation between Hamburg in this State and Hamburg in Germany, via the Savannah River and Charleston, and actually succeeding in a portion of his plans with the aid of McDuffie and other far-seeing men. In effect, there was at that time an earnest effort to bring about the very same thing that South Carolina has been striving for so vigorously in the last few years in the effort to open the port of Charleston to trans-Atlantic navigation without one-thousandth part of the incentive. The efforts to improve transportation facilities have been much influenced, and, indeed, retarded, from time to time in their history by such events as the introduction of the locomotive and the advent of railroads, but today the problem of bringing about the competitive navigation of the river courses and inland waterways and the opening of the cotton belt to direct European steamship service through the port of Charleston, the chief seaport of South Carolina, is far more important and is justly receiving more attention among patriotic men who wish to see the fullest agricultural, commercial and industrial development in this State, than it has ever done. The benefits to accrue from such service, and the efforts being made to secure it, are matters more fully treated elsewhere.



D. C. HEYWARD.

Duncan Clinch Heyward has been the prime mover in recent years in the effort to bring about this desirable result. His recommendations as Governor in 1904 led to the establishment of a Department of the State Government by the General Assembly, one of the principal objects of which was to labor for the

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reëstablishment of the commerce of the State, the restoration of the business of her seaports, and the upbuilding of her agricultural, industrial and commercial interests. He has been an earnest advocate of all measures leading to the opening of the South Atlantic seaboard to trans-Atlantic service, realizing the immense value of the South's dealing directly with the consumer. As Governor, he urged this project; as a citizen and as president of the Southern Immigration and Industrial Association, he has labored earnestly to accomplish the desired end. In all the efforts made by the South Carolina Department of Agriculture, Commerce and Immigration to accomplish this purpose he has rendered invaluable aid. His successor in the high office of Governor, Martin F. Ansel, has likewise taken an active interest in the effort to accomplish such excellent results as must follow the permanent establishment of such service, and during 1907 personally attended the National Rivers and Harbors Congress in Washington.

Navigable Territory.—South Carolina's coast line is about 190 miles, and its nature is such as to make an inland waterway for navigation purposes not only possible but profitable. The river systems likewise afford excellent navigation with proper attention and care, to the very heart of the State. In other words, steamboat navigation is possible for full 5,000 miles of shore and inland ways. These very conditions had a marked influence on the choice of locations by the early settlers of the colony. No effort will be made to trace the history of the effect of watercourses upon the original Indian tribes, though there was such an influence, which is instantly apparent to the reader of the history of the early settlements.



J. D. DIAL, CHIEF CLERK. MISS SARAH J. CUNNINGHAM, STENOGRAPHER. J. F. FAMAEY, CLERK—INTERPRETER.

Office Force of Department of Agriculture, Commerce and Immigration.

Early Efforts.—As early as the spring of 1682 the Colonial Assembly is found making provisions for the construction of roads. The history of early road building in South Carolina is of rare interest. In 1707, referring to the water transportation, Gov. Archdale wrote that "Charles Town trades near one thousand miles into the continent."

Early in 1700 at interior points on the Savannah and Congaree, and other rivers, forts and trading posts were established and much business was done, it going largely to Charles Town.

Natural Heads of Navigation.—The early road and bridge building legislation began in earnest in 1737. Up to 1750 all South Carolina's white people were Europeans who came by sea to America and went to the interior settlements by boat. Hamburg, Granby, a point near Columbia, and Camden, a point near Cheraw, were the chief interior points of settlement—each being at the natural head of river navigation in the State. Above the line made by these three points, as Mr. Trenholm points out, and as the historical facts substantiate, in the year named, began to arrive people from Virginia and Pennsylvania, who settled in what is to this day known as "the up-country." These people came and were followed by numerous others after the defeat of Braddock in 1755. Thus were laid the foundations for the wide difference of opinion, thought and action that until recent years existed between the people of the

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"low country" and those of the "up-country." It was a perfectly natural difference. The "up-country" settlers undoubtedly did most of their trade with their kinsmen and friends to the North, and it does not appear that until after the Revolution there were any material business relations between the two classes of early settlers of South Carolina. The following from Mr. Trenholm, written in 1882, is interesting on this point:

"In corroboration of this opinion, I am informed that, only two or three generations ago, cotton was sent by wagon to Philadelphia from the neighborhood of Hamburg; and if from a point in constant communication with Charleston, why not more probably from points not so advantageously situated in that respect? In 'Gregg's History of the Old Cheraws,' page 110, it is said: 'The stock was driven to Charleston and other places on the coast, as well as to more distant markets. Large numbers of cattle were sent from Pee Dee to Philadelphia.' Also, at page 112, in a note, we find the following: 'General Harrington sent three four-horse wagon loads of indigo to Virginia, and with the proceeds bought 15 to 20 negroes.'

"It may be a mere coincidence, but it is singular that, today, when railroads dominate trade, the only railroads in the State which are avowedly ancillary to the trade of Charleston, are those which terminate at Hamburg, Columbia, Camden and Cheraw; precisely the four points which, a century and a half ago, were outposts of European colonization; while all the railroads traversing upper South Carolina are controlled either by the Pennsylvania Railroad, or by the Richmond and Danville, of Virginia.

"Is it the persistence of some occult natural law of trade, is it fate, or is it simply accident, that has wrested from Charleston the control she once had of the Greenville and Columbia, the Blue Ridge and the Laurens railroads, and thrust them into the hands of Pennsylvania and Virginia? However this may be now, there is evidence that as soon as the settlement of the upper country developed itself, the Provincial Legislature at Charleston were diligent in passing Acts for the establishment of ferries and the construction of roads to connect the new settlements with the capital. It appears from a careful comparison of these Acts, that many of them failed of their purpose, for the same roads and the same bridges were over and over again ordered to be constructed, and frequently new commissioners were appointed at each repetition of the legislation."

No attempt is here made to trace the road construction operations of the early days. It suffices to say that just after the Revolution every effort was made to unite all the people by proper arteries of transportation.

First Navigation Act.—The first act relating to navigation was rather a weak one, passed in 1778, looking to the opening of the Wateree river; another act was passed in 1785, equally as ineffective, to open all navigable waterways to practical usage. In 1786 there was an act incorporating the Santee Canal Company. The next year there was an act relating to the navigation of the Edisto and Ashley, and chartering a company to open the navigation of the Catawba and Wateree rivers from the North Carolina line to Camden. Gen. Thos. Sumter and John Rutledge were among the incorporators of the last named company. The idea was to accomplish this navigation by means of dams and locks. Like action was taken in the same year as to Lynche's Creek, Clarke's Creek and Black Creek, the inhabitants to do the actual work. In the same year an act was passed to form a company for the opening of the Broad and Pacolet rivers, the act being almost in the exact terms of the Wateree-Catawba act.

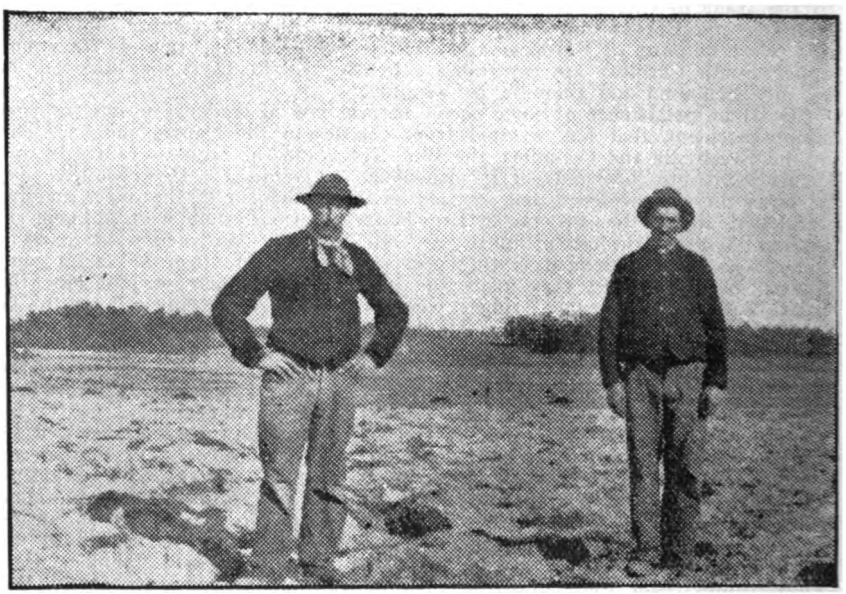
These few instances show that the people of the State during this period were beginning to realize the advantage of proper transportation facilities, and were bending their energies to that end. Drayton, in 1802, in his "View of South Carolina," gives a valuable epitome of the transportation facilities of this period.

The Santee Canal.—It is recorded that about the time the advantages of utilizing water transportation began to be realized, bales of cotton were thrown in the river above Hamburg and allowed to drift to that point, that rafts carried all kinds of products to port on the navigable streams. This all led to an earnest effort to establish water communication between Charleston and the upper portion of the State, having its culmination in the chartering of the Santee Canal Company, with the purpose to connect the Santee and Cooper rivers. In 1792 the work was commenced and after an expenditure of $750,000 it was completed in the middle of 1880. It had 13 locks and was 22 miles long. The summit level was 69 feet above tide level and though for more than 30 years it served a splendid purpose, the suppy of water on the summit was so bad that it finally was abandoned.

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Before Railroads.—Mills describes the period prior to the advent of railroads in this way, setting forth fully all of the means of water transportation that had been provided at that time. This is more fully dealt with under the subject of "River Service."

Trans-Atlantic Navigation.—Why it is that the people of this section have rested content to make no general effort to secure the magnificent advantages that must necessarily follow the establishment of trans-Atlantic passenger and freight service to and from Europe is one of the economic mysteries of the South. At rare periods able men have striven for the thing—something meaning more than almost anything else, but history shows that on each occasion there has been a lack of united effort, a perfect content to deal in the marts of the world by paying tribute to men having no other interest than to keep the producers doing the same thing year in and year out, decade by decade, half century by half century. Even the advocacy of a man like Geo. McDuffie failed to obtain the support that, had it been given, would have perhaps made the South of today far and away greater than the North of the present time. Let us look for a moment at the records of a rare opportunity lost at a time when permanent results of greatest value might have been attained.



TWO BELGIAN IMMIGRANTS ON A FARM NEAR COLUMBIA.

The Efforts in the 30's.—One of the most interesting documents relating to the history of transportation in South Carolina was published in Augusta, Ga., in 1837, under the title of "The Origin of the Town of Hamburg, S. C., America, Founded by Henry Shultz, July 2, 1821." This document contained a copy of the Act of the Legislature of South Carolina of 1835, incorporating "a company to open a direct trade between Hamburg, America, and Hamburg, the Kingdoms of Prussia, Denmark, Holland and Sweden, Europe." and also contains the details of a visit of a representative of the Governments of Hamburg and Prussia sent to South Carolina to investigate the possibilities of the undertaking. The pamphlet contains other letters in regard to the enterprise from men like George McDuffie, gives the proceedings of a convention for the carrying into effect of the project for direct trade between Southern ports and Europe and contains most interesting data in regard to the Hamburg Specie Bank.

Notwithstanding Gen. Wade Hampton (I) had twice before failed in the effort to erect a bridge to connect the States of South Carolina and Georgia at Augusta, the Legislature of this State in 1813 granted to Shultz and to Lewis Cooper a charter to build such a bridge. The next year another charter for the same purpose was granted the same men. The project was looked upon as something visionary. In 1816, after accomplishing the bridging of the

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stream, which had up to 1836 stood firm for 23 years, Shultz again astonished the natives with the project of building a wharf at Hamburg. He accomplished this 20 years prior to 1836 and then proceeded to build the town of Hamburg, concerning which he wrote in that year: "My town has not only been built, but has wrested from Augusta that South Carolina trade of which she had possessed herself and even wins from her every day fresh portions of that of Georgia." The Legislature granted Shultz later $50,000, and with $15,000 of this he put a boat upon the Savannah river, opening direct steam navigation between Hamburg and Charleston. This undertaking was successful and within two years six other boats were embarked in the same trade—"The Commerce," "The Hamburg," "The Edgefield," "The Pendleton," "The Augusta," "The Henry Shultz," and "The Maid of Orleans." At the first completion of the Hamburg and Charleston Railroad some of these boats ceased to operate, their management becoming alarmed. In a short time, however, they returned to service two for one. Shultz remarks: "Experience has shown that though passengers may prefer railroads, merchandize prefers the rivers." At



TWO OF THE NEW COMERS—A BELGIAN HAYSTACK IN REAR.

this time the population of Hamburg was about 2,000, and about 35,000 bales of cotton was being handled annually. Important in its bearing upon the question of early transportation was the formation of the Bank of Hamburg, with a half million dollars of capital, in 1822, which bank, in 1835, has in its vaults over $300,000 in gold and silver and was, so far as known, the only specie bank then in operation in America. It was about this time (1831) that John McLean built his railroad in the town of Columbia, but it did not succeed, proving useless. Failure also followed the effort of Blanding and others to build in 1833 a railroad from Columbia to Branchville, and the same fate followed the effort in 1834 to construct a railroad from Edgefield to Aiken and one from Edgefield to Hamburg. It was during this period also that the State made appropriation of about $2,000,000 for a system of internal improvements, chiefly in the building of canals and other undertakings of like character. All this was in process while Shultz was succeeding with his undertakings and led to the chartering of Shultz's cherished undertaking of opening trans-Atlantic navigation, connecting the interior, via the port of Charleston, with Europe, his company being known as the "American and German Trading and Insurance Company."

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McDuffie's Advocacy.—As bearing directly upon the undertaking projected at that time and upon almost the identical undertaking of connecting the European markets of consumption with the cotton belt through the port of Charleston, which has for the last two years been so vigorously pushed, the following official document from George McDuffie is of exceeding interest:

"Executive Department,
"South Carolina, May 20, 1835.

"Whereas Henry Shultz, the Founder of the Town of Hamburg, in this State, has projected a plan for opening a direct commerce between Hamburg in Europe, and Hamburg in America, and has requested me, as the Governor and Command-in-Chief of the State of South Carolina, to certify such facts, and express such opinions, in relation to his capacity, public spirit and usefulness, as may enable all persons interested in the new branch of commerce contemplated, to form a correct estimate of the credit due to his statements, and of all the weight to which his opinions are entitled, touching the premises: Now, therefore, I do hereby make known to all whom it may concern, that the aforesaid Henry Shultz, is, in my opinion, eminently distinguished for enterprise, sagacity, perseverance and public spirit, qualities of which numerous monuments, equally beneficial to the public, and honorable to himself, furnish ample testimony. Amongst these may be enumerated the Bridge across Savannah River, so constructed as to bid defiance to the floods, an achievement often attempted before, but never successfully, and which has greatly benefitted the commerce of the two States; the Wharf at Augusta, highly useful to that city; a line of inland navigation between Hamburg and the city of Charleston, successfully established by his perseverance, as it was projected by his sagacity, when it was generally deemed impracticable, and which has greatly promoted the prosperity of the State; and finally, the Town of Hamburg, now standing upon a solid foundation, upon a site which he found a quagmire, in which between thirty-five and forty thousand bales of Cotton are annually brought to market. This Town standing at the head of the longest Rail Road in the world, and communicating directly and daily with the emporium of the State, will furnish great advantages for foreign agents to purchase Cotton directly from the market, instead of purchasing it from speculators in New-York, Philadelphia, and elsewhere, encumbered with numerous intermediate expenses.

"Additional facilities will be given to the commerce of the place by a Bank, which the Legislature will readily charter, if application is made for it. This town has been built by the enterprize and indefatigable perseverance of Henry Shultz, under the fostering care and patronage of the State of South Carolina; and in the progress of its establishment, Henry Shultz, has had large pecuniary transactions with the State, which have all been satisfactorily and finally adjusted.

"In conclusion, I take occasion to express the opinion long entertained, that the extension of a direct commerce between the Cotton growing States of the American Confederacy, and the Continent of Europe, consisting of an exchange of our staple for the manufactures of the Continent, would greatly conduce to their mutual prosperity.; and to express the hope that a native of Germany, now a citizen of South Carolina, may be the instrument of rendering an equal benefit to his native and his adopted country, by opening a new channel of commerce, founded upon the principles of friendly reciprosity, which the State of South Carolina has always cherished, in her intercourse with foreign States. I have directed the Seal of the State to be impressed on this document.

"GEO. M'DUFFIE.

"By the Governor. (Seal)
"Saml. Kingman, Deputy Secretary of State."

Equally as strong a document bears the signature of Wm. C. Preston. Other distinguished men of the time signed documents as to the opportunities that would follow direct export and importation of products through the port of Charleston. The Legislature chartered Shultz's company in 1835 with a capital stock of one half million dollars and in 1837 Edward Delius came as the bearer of dispatches from the Governor referred to above, receiving a warm welcome at Hamburg, Col. Brooks of Edgefield presiding at the reception. "The Charleston Mercury," of May 15, 1837, receiving the news of this event, said: "In the present midnight of commerce, such intelligence as this is like a ray from the morning star, telling of the coming dawn."

It was shown at the time that the South had the same seas and could use the same ships as the Northern ports and that the Northern ports did not have at their doors one half of the products the markets needed in Europe that the South could and did furnish. It was said, "going to the North to buy cotton and rice would be like coming to the South to buy ice."

Action in 1837.—In the fall of 1837 a convention was held in regard to this undertaking in which among those representing South Carolina were George McDuffie, James Adger, W. Barnwell, and others. George McDuffie was chairman of the committee which submitted the report that was the action of the convention. This report was exceedingly interesting. The committee said that the conditions were such that it was timely for the staple growing States to be transformed from a state of commercial dependence, "scarcely less reproachful to their industry and enterprise than it is incompatible with their substantial prosperity." "There never was presented," the report continued, "to the capitalists of the South and Southwest such an opening for profitable enterprise and they are invited by the most powerful considerations to improve it." The report said further: "Now that the fiscal operations of the Federal Government have been so greatly reduced and the field of competition fairly open,

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if they should still look on with listless apathy, while the mighty current of our own peculiar commerce is flowing literally by them, to nourish distant cities and fertilize the barren hills of distant communities, we must then acquiesce in the judgment which the world will pronounce, that we deserve our destiny."

"But the committee indulge the confident belief that such reproach will no longer rest upon us. The public spirit of our people has been roused into action; they have been awakened to a sense of their condition, and all are prepared to co-operate in their respective spheres, in the great work of throwing off the shackles of our present colonial condition and establishing our commercial independence upon a lasting foundation.

"In concluding their report the committee cannot but express their strong conviction, that the success of this great movement towards the emancipation of the staple growing States from their commercial trammels, will depend more upon individual, sustained and supported by an enlightened public opinion, than upon any measures of legislation, however important these may be. The business of direct importations must be commenced at once, for if the present occasion is permitted to pass away unimproved, one equally propitious may never occur. The committee recommend the convention to adopt the following resolutions, in furtherance of the views expressed in the foregoing report:

"Resolved, That in the opinion of this convention, the present conjuncture in our commercial affairs is eminently propitious for the establishment of a system of direct importations, through our Southern and South-western cities, and that we are called upon by every consideration of interest and of patriotism to throw off the degrading shackles of commercial dependence.

"Resolved, That with a view to induce public spirited capitalists to embark in this business, the people of the staple growing States be recommended to give public manifestations of their determination to encourage and sustain importations through their own seaports. * * *

"Resolved, That it is a sacred duty which the citizens of the Southern and South-western States owe to themselves, their posterity, and their country, to give a decided preference (where the terms are equal) in procuring their supplies, to our merchants who carry on a direct trade with foreign nations.

"Resolved, That a Committee be appointed to prepare an address to the people of the Southern and South-western States, setting forth the advantages and practicability of carrying on a dirct trade with foreign nations—exhibiting in detail the extent of their resources.

"Resolved, That as an introduction to a direct importing system at the South it is indispensibly necessary that the crop of the present year should be directly exported by Southern merchants and planters, and that to effect this object the Southern banking institutions should lend such aid as they safely and conveniently can."

"The Charleston Courier," of June 6, 1835, and "The Charleston Mercury," of September 21, 1835, gave the strongest reasons why such trans-Atlantic service should be established. "The South Carolinian," of June 30, 1835, likewise strongly endorsed the project. "The Georgia Press" also urged prosecution of this undertaking with great vigor and commended the South Carolina Legislature for the aid it had given to its projectors. John S. Jeter signed the legislative special report of December 16, 1836, endorsing in the strongest possible manner the effort to merely put in operation the natural laws of trade.

The War's Effects.—Things drifted along after the efforts of Shultz had failed for lack of combined support until civil war came and with the Civil War were ended, until very recent days, any hope of getting trans-Atlantic freight and passenger service opened to the South. Charleston's imports and exports have steadily dwindled, though there is at this time some slight recovery. There has seemed to be a general willingness on the part of the people of the State and the city of Charleston to let this condition prevail, with occasional spasmodic proclamations that the condition was due to discriminations—which proclamations may, perhaps, have been for the moment true. But the underlying cause has been and is today the same as that named by McDuffie—inactivity—the contentment with existing conditions, a willingness to let well enough alone, when by the expenditure of a little energy and money the desirable result could have been obtained.

The Latest Effort.—In 1906-7 the Department of Agriculture, Commerce and Immigration, with a full knowledge of the experiences of the past, moved vigorously for the making of Charleston the kind of port she could be, and by reason of natural advantages she should be, but the same conservatism has followed, and as this is written the desired result has not yet been finally obtained. This situation has been disappointing, but it is yet deemed one for which a solution may be found and in the end the desired result, with all that it means, achieved. The State Department has in several forms laid the door of "opportunity" open, and at present the last possible effort perhaps for some years is being made. If this should fail it will not have been the fault of the State Government.

Railroad Transportation.—In railroad transportation wonderful headway has been made during the last decade, particularly the last ten years, but this is dealt with separately. It suffices to say that South Carolina has thrown no obstacle in the way of such advancement, and today the State is a network of railroads, doing a business their projectors little dreamed of when the lines were constructed.

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The Key to the Situation.—In the matter of transportation today the whole key to the situation, so far as South Carolina and the South are concerned, is the successful opening of trans-Atlantic freight and passenger service; if this be accomplished very little else need be a source of anxiety to the city of Charleston, the State of South Carolina or the Cotton Belt States. There is every incentive for the accomplishment of this desirable economic end, and there is but little to be lost in case of failure of efforts—if anything. Therefore, those whose interests are paramount are meeting the situation squarely, energetically and with indefatigable perseverance, and trusting that so great an achievement will be attained during 1908.

The Opportune Moment.—It is unnecessary to deal more generally with transportation matters at this stage, for the ocean steamship, coastwise shipping and railroad situations are touched upon more completely and in detail in what follows. The whole key to the situation is, as already said, in the successful establishment of trans-Atlantic freight and passenger service to the South-Atlantic States through the port of Charleston. With the internal improvements now contemplated there is no reason, if trans-Atlantic transportation be obtained, why the State of South Carolina should not be as great a beneficiary of such service as the Eastern States have been, for physically the port of Charleston to the actual navigator of a steamship is today a more desirable port than New York. She is nearer from the open ocean to dock—only 30 to 40 minutes to dock against several hours at New York—and the harbor can carry any ship at 32 feet of water at high water. That Charleston is the best port on the South Atlantic coast, since the jetties were put in, is unquestioned, and it only remains for this port by her own natural advantages, coupled with the activities of her business interests, to claim her own.

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Trans-Atlantic Service

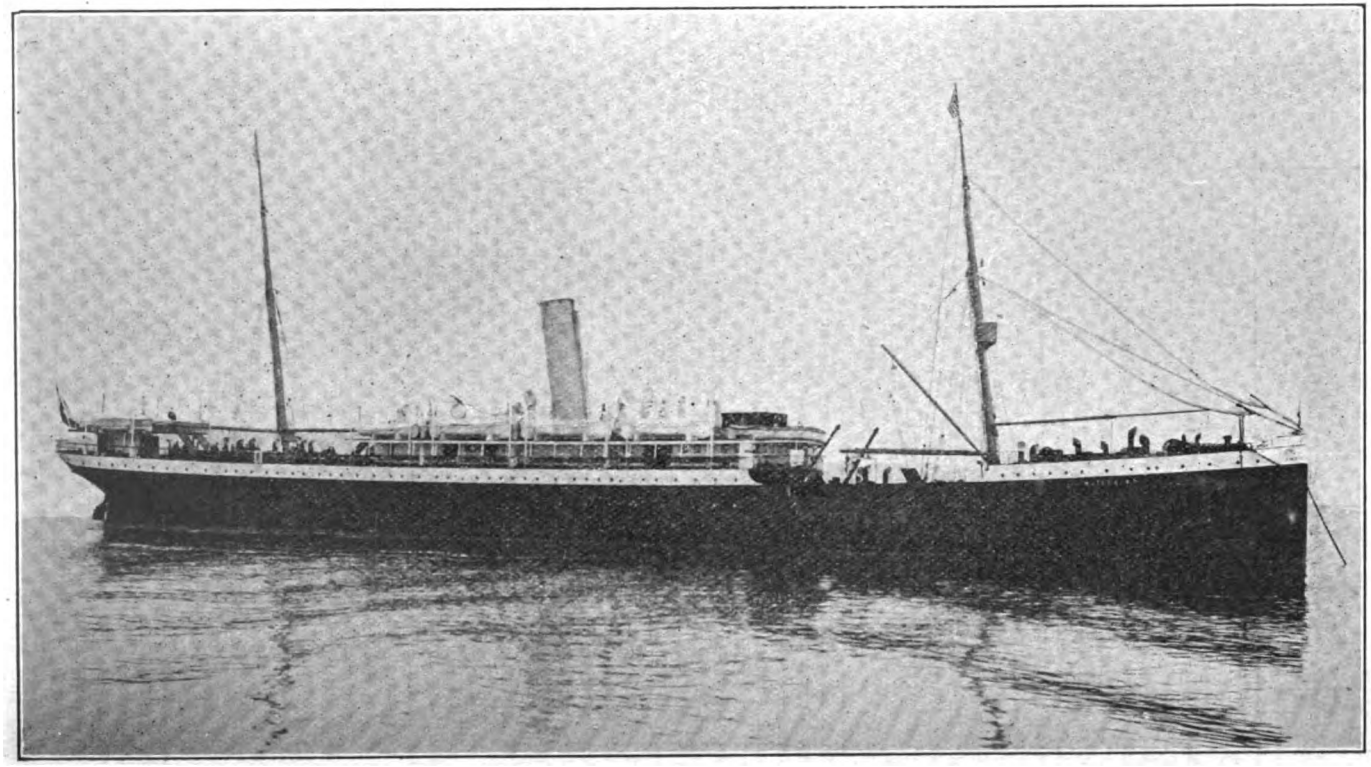
At this time the ports of South Carolina are not enjoying regular trans-Atlantic steamship service of any kind, either freight or passenger. Tramp steamers come and go from the State's splendid ports in a desultory way. For the past three years every energy, particularly of the State itself, has been applied to the effort to open the port of Charleston. Two experimental steamships have been sent to Charleston by one of the greatest steamship companies of the world—the North German Lloyd. One came in the fall of 1906 and the other in the late winter of 1907, the "Wittekind" being used for both sailings, and attracting international attention because of the economic importance of the undertaking, which was supposed by many to be due merely to the immigration side of the problem. At present negotiations are pending, negotiations in which the State, the city of Charleston and the railway lines are all interested, that it is confidently expected will within a few months result in the establishment of a regular service of this kind, bring Charleston to the fore as the central export and import port of the Cotton Belt Section of the United States, and stimulate every industry in the State from mountain to seaboard. It seems almost incredible that after Charleston harbor had been improved by the Federal Government to such an extent as to render it one of the most accessible, if not the most accessible, ports on the Atlantic seaboard, that no determined effort should have been made by any of the interests concerned in the State to get a regular trans-Atlantic service established. When the State Department of Agriculture, Commerce and Immigration was created in 1904 the full realization of the need of vigorous action in this regard became apparent, and for three years past the Department, with the co-operation of all interests, particularly the textile manufacturers, who will scarcely reap the permanent benefit as much as the business interests of Charleston and those engaged in the production of agricultural products, has not ceased for a moment its efforts to accomplish the desired end. Commercially the possibilities can not be calculated.

Without comment attention must here be called to what has been stated of the efforts prior to the Civil War, and to the extracts given below from the centennial address of W. L. Trenholm, delivered on February 11, 1884, to the Chamber of Commerce of Charleston. As Mr. Trenholm says, "wherever there is a human need to be served, wherever human labor or the bounty of nature has added another unit to the world's products, either she speeds the caravan, the ship or the train, and there the mustering band is found supplying the want of one with the superfluity of another." In the case of Charleston, though she is the natural port, inactivity and the upbuilding of artificial channels of trade in the East have robbed her of her inherent prestige and day by day, hour by hour, this deprivation by artificial means is becoming greater because of contentment with minor achievements, which mean something for the present but nothing for the future.

In 1884 Trenholm wisely said: "Here, upon this little stage of South Carolina, history is ready to present to you scenes illustrative of all phases of commerce, from its simplest form of barter to the complex system, which brings into play the railway, the telegraph, and the telephone, the steamship and the compress, the subtle forces of credit and speculation, the potency of capital and the regulative influences of competition."

He goes back to the early colonial days and tells of the time when the new settlers conducted a petty traffic with the Stonos and the Westoes, when the traders brought their products to Charleston on pack horses,—a commerce abounding in adventure, a commerce that promised to make Charleston the foremost American port. Trenholm traces the development of this commerce to splendid proportions, and severely and properly rebukes the apathy that prevented the making of Charleston the foremost port of America. He says that at times this apathy to natural advantages assumed the appearance of actual hostility. He traces the splendid development that occurred between 1739 and

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THE NORTH GERMAN LLOYD STEAMSHIP "WITTEKIND."

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1754—the period when Shultz was so earnestly at work with the support of Gov. McDuffie. Then he says:

"During all of these years, notwithstanding its immense agricultural development, South Carolina made no progress in manufactures or in navigation; her lucrative commerce built up no ship-owning interests at Charleston, attracted no banking capital, nor did it develop any other permanent institutions subsidiary to its maintenance and extension.

"Compared with Boston, New York and Philadelphia, Charleston was, in 1771, the principal point in America for the export of domestic products, yet in each of those cities commerce was then making a permanent home for itself by building up structures which have borne the vicissitudes of war and peace during more than a century, while here nothing seems to have been solid, nothing has endured more than a generation or two, except what has been rooted in the soil and identified with agriculture."

With a clearness and degree of accuracy that is rare Trenholm traces the history of the commerce of the State after the Revolution, and tells how it was restored by the merchants of Holland, speaking of the visit of John Adams to Amsterdam. He severely condemns legislative blunders, which he says are "inevitable in dealing with purely business or commercial matters."

In 1788, he says, the people of the State neither valued nor respected trade. He severely arraigns the condition of public sentiment, and goes on to show that land was not attaining a just valuation. In earnest language the lack of foresight in the matter of the extension of the State's foreign trade and commerce was deplored, and the remarks apply with equal force at this hour. He condemns the lack of judgment of Virginia in refusing to charter a steamship line to European ports in 1837-38. He deplores the lack of representation in the councils of the State by the merchants of Charleston, which he plainly avers was due to a belief that "it was disreputable to attend to business of almost any kind." All that time out of the 121 business men in Charleston only one was native born.

The natural results of such conditions are pointed out by Mr. Trenholm. After treating the subject fully he says: "If Charleston had today all the wealth she has lost from this cause alone (the exodus of men who had made fortunes there) she would be one of the most opulent cities in the United States, and every part of South Carolina would for a century past have been experiencing more or less of material benefit in improved industrial development and increased value of land."

Passing through the other periods of State history with marked ability Mr. Trenholm says:

"Unfortunately lost opportunities can never be recalled, we cannot get back the wealth that was driven away from us in so many ways; we cannot regain the relative rank which rendered it possible for Charleston between 1834 and 1860 to have become the chief emporium of the South. She can never again hope to be, as she might then have made herself, mistress of the trade of all the rich and growing regions South of the Ohio and Missouri Rivers. Had Charleston merchants in 1834 exercised in the City Council, in the State Legislature and among the people the influence to which their public usefulness, their aggregate wealth and their enlightened views entitled them, the channels of a vast internal trade might have been, once for all time, laid down converging towards her harbor and subsidiary to her commerce.

"Robert Y. Hayne, among all the statesmen of South Carolina, seemed alone at that period to have grasped the idea of making Charleston the outlet of distant interior regions; but alas! he sacrificed his life in almost his earliest efforts at railroad extension to the West; and after him there was no one to carry out his work.

"As has been already said, 1850 found Charleston's prosperity more surely established and more soundly progressive than it has ever been before. By that time several large commercial houses had grown up both in the foreign and inland trade; nearly all the prominent merchants were either natives of the State or had been long identified with its varied interests, banks and insurance companies were numerous and strong, the railroad communications were extending, steamers to Havana and to Northern ports increased the facilities and the scope of trade, while the agriculture of the whole South was lucrative and expanding. Then almost for the first time in the history of South Carolina the commercial element sought recognition in public employments and claimed a voice in the public councils. Between 1850 and 1860 there was quite a sunburst of prosperity, which led to many speculative enterprises and to unwise investments in distant railroads. Here again was felt the want of that conservative influence which is always exercised by a numerous body of retired merchants. Under the honest by erring advice of some of our best and most active merchants, the City Council was induced to incur great expenditures and to increase the city's debt in order to aid railroads that were not controlled here, and which, when completed, became at once hostile to our trade. It must be borne in mind that in public matters, the retired merchant is generally a safer counsellor than the man still actively engaged in business. It is an even question whether a community does not lose rather than gain by having its active business confined to a small number of wealthy houses or individuals, but there is no doubt about the benefit of having as many retired capitalists as possible living in any commercial city.

"Private individuals and even the banks were misled by the general prosperity into many imprudent undertakings and injudicious investments; yet such was the financial strength and good management of our moneyed institutions that three banks in Charleston passed through the panic of 1857 without suspending, and by 1860 the tide of prosperity was again in full flow.

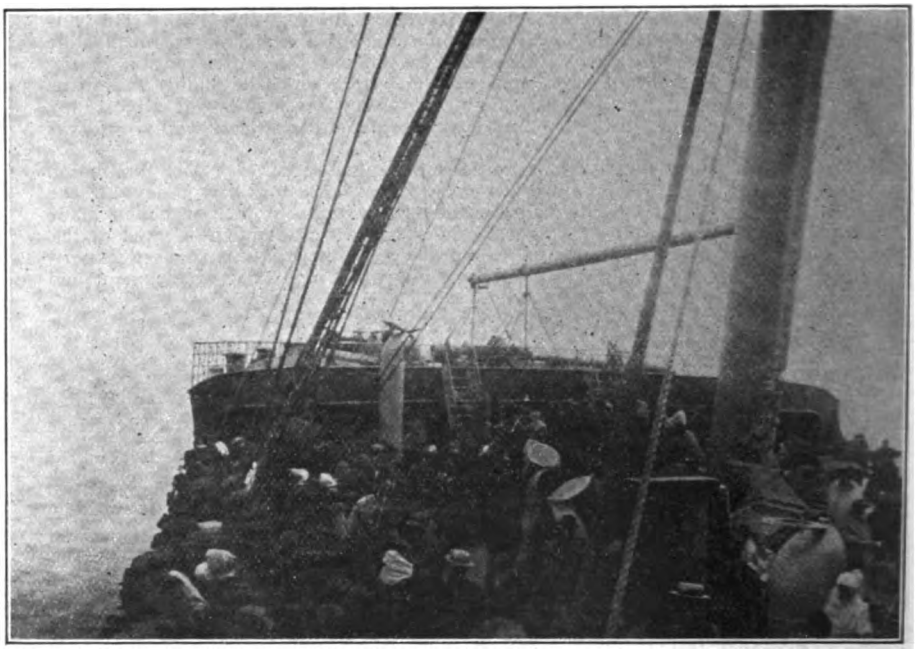
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"When the war broke out the merchants and the citizens generally gave uncalculating support to the Confederate Government. In 1861 the banks lent to the Confederate treasury, at 5 per cent. per annum interest, one-half of their entire capital, and from the beginning until the fall of Charleston all the resources of her chief houses were freely hazarded in importing supplies for the army and other necessaries of war.

"When the end came, the accumulations of generations were found to have been converted into bonds and stocks which went out of existence with the Confederacy.

"Railroad securities were of doubtful value, bank stocks appeared to be all worthless, the insurance companies were utterly bankrupt. Bad as things were in the city, the surrounding country was literally an unproductive waste. The rice plantations had been generally abandoned and consequently relapsed into swamps; the labor had been removed from them and in many cases the buildings and machinery had been destroyed. The sea islands had early fallen within the military lines on one side or the other, the property in the lands over a large area had passed away from the owners, the labor was utterly demoralized and considered irreclaimable.

"Every railroad leading out of Charleston had lost bridges and trestles, on some the track had been torn up for miles, none had adequate equipment for even the limited business offering, nor were the means at once obtainable for renewing the worn-out rails and crossties. In a single sentence, Charleston lay like a wreck on the shore: the region around her was desolate and barren, every prospect was dismal, every circumstance was strange to all past experiences. This was the point of our new departure in 1865. We were much worse off than our predecessors of 1783, but, like them, with courage and hope we at once began to make the best of our circumstances; trade revived, new capital came in, the railroads were rehabilitated and agriculture was resumed on the sea islands and in the rice fields.



ON THE "WITTEKIND" ON THE ATLANTIC.

"Unfortunately these efforts were not allowed even fair play; they were hampered by the disorder of the times, the ignorance and rapacity of military officials, the ever-growing greed of a new order of politicians, the corruption of State, county and municipal functionaries, the degradation of the State judiciary, the demoralization of labor and the subversion of social order.

"Notwithstanding so great an accumulation of obstacles and discouragements, Charleston has made, slowly and painfully, some progress every year, and with the growing wealth of this and surrounding States she seems assured of continued increase in population and augmenting business."

In summing up, Mr. Trenholm prophetically said:

"The practical question which it today most concerns us to answer is, what is the first thing to be done in order to increase and perpetuate the commercial prosperity of Charleston? To that question I venture to propose this answer: Improve and develop the transportation facilities that center here and utilize the geographical position of Charleston by enlarging the foreign commerce. Commercial knowledge and experience is now so widely disseminated, quick mails and the telegraph have so changed the methods of business, capital flows so readily and promptly towards any

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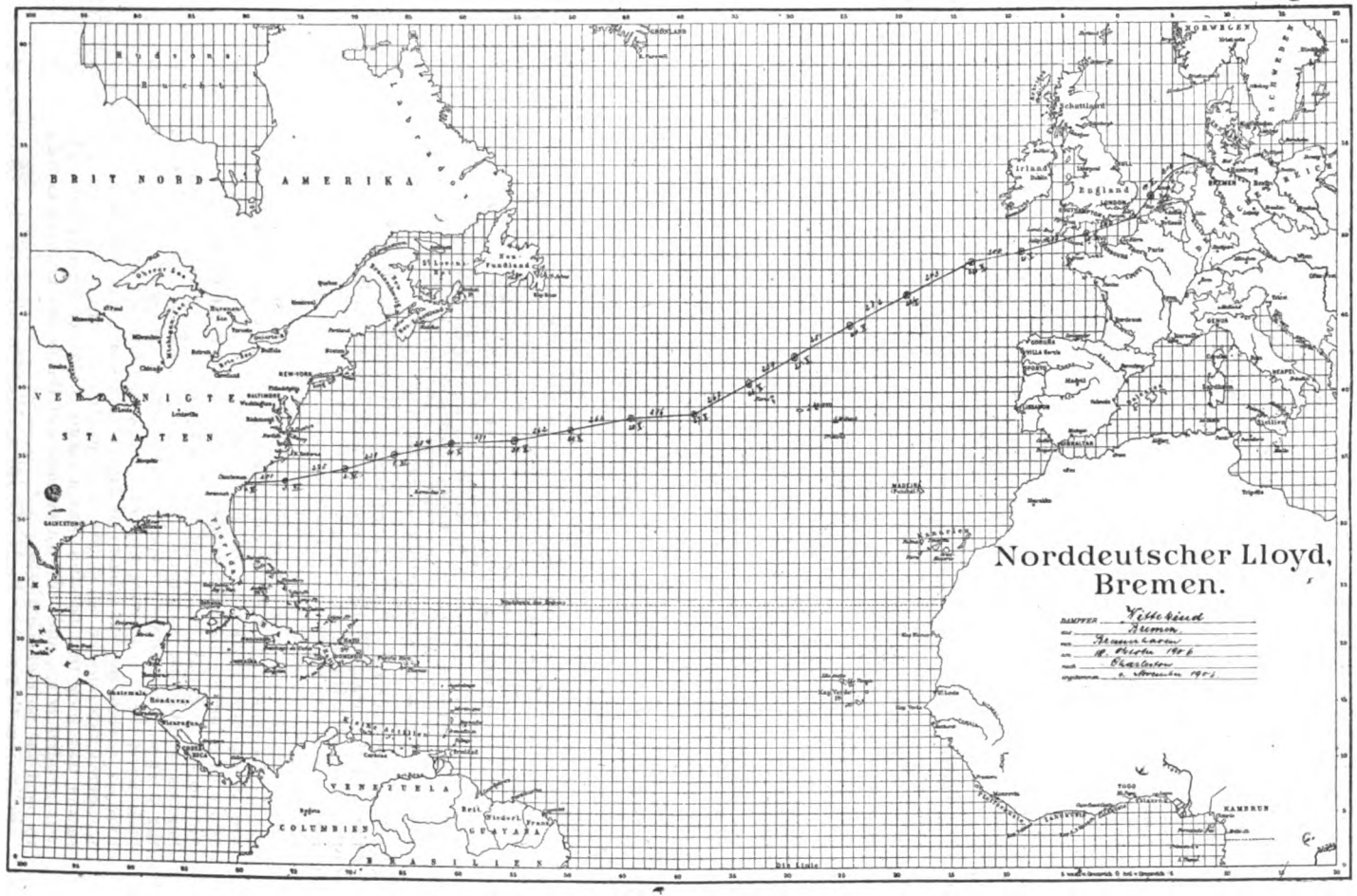


CHART OF THE "WITTEKIND'S" FIRST VOYAGE FROM BREMEN TO CHARLESTON.

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point offering it special profit with due security, that the struggle for trade has tended more and more of late years to resolve itself into a competition among *equivalent lines of transportation.* * * *

"A seaport needs lines of transportation by both land and water; formerly these were separate businesses, conducted distinctly, and the merchants of every seaport, the wharf-owners and transferrers, had to be paid for effecting a connection between the land-carriers and carries by sea. This break in the continuity of the process of transportation proper, not only incorporated into the cost of through transportation the transfer and other charges at the seaports, but also tended to make each seaport a market for staple commodities, and to maintain in each a body of merchants dealing in those commodities—a valuable perquisite for seaports controlling interior lines of transportation and the complementary ocean lines.

"When Charleston controlled the railroads throughout the State and had banking and commercial capital concentrated here to a sufficient amount to give us monetary command of the trade over a large area in this and surrounding States where capital was deficient, we could and did coerce business here in spite of the cost of transfer, but when competing ports grew richer and we poorer, we not only lost the business, but in the effort to retain it we broke down every railroad under our control and stood helpless while they passed into the hands of our rivals.

"If you ask how the serious consequences of this mistake are to be retrieved, I must say I see no way except by extreme self-denial in respect to charges of all sorts, by bringing the railroads not only to the water, which has been already done, but by continuing them as far as practicable along the whole water front, by devising cheap handling and storing, by relieving trade of every burden, restriction and disability that now rest upon it, by taking measures to protect shipping and to attract it here, and in every other way to bring our port not only on a level with, but as much as possible below the level, of its rivals in point of expense, while adding to the accommodations and dispatch of business here.

"It will be said, perhaps, that business is only valuable for its emoluments and that there are but small emoluments in what is called through business. I admit that the direct emoluments of through business are small if estimated upon a single transaction, and it is a natural law of trade that a great volume of through business induces greater activity and diversity in local transactions and avocations.

"It is to be remembered, also, that the characteristic feature of trade today, all over the world, is a declining rate of profit upon a growing volume of business. When millions are handled as easily and quickly as thousands were fifty years ago, percentages must be reduced correspondingly. These general principles necessarily apply to us, but even if they do not, we really have but little choice in the matter, for apparently either we must make voluntary sacrifices by reducing the scale of our charges or the business we now have will be drawn away from us.

"While all possible encouragement should be given to what is called through business, not only for its direct emoluments, but for the much greater benefits that flow from it, our main efforts should be directed to building up here a great emporium, a market place, a point to which buyers and sellers will find it convenient, agreeable and advantageous to resort."

He then advocated, with potent reason, the seeking of trade with the West Indies and South America, and export and other business from the Middle West, giving both business and strong geographical reasons therefor.

Then he says:

"It is no recompense to the merchants of Charleston, who are yearly doing less and less, to know that new manufacturing and other employments will utilize the capital and facilities that might be profitably used by them in more extended commercial operations; nor is the change of public advantage, for this ought to be a great commercial city; and if manufactures had arisen here out of commercial prosperity it would have been well, but when we turn to them as a refuge from commercial decay it is far from well, for it involves waste of valuable geographical advantages, of costly wharf and warehouse erections, of the accumulated experiences of generations. What farmer will leave his arable lands uncultivated in order that he may invest his money in manufacturing? What manufacturer will leave his machinery to rust in idleness while he employs his time and capital in farming?"

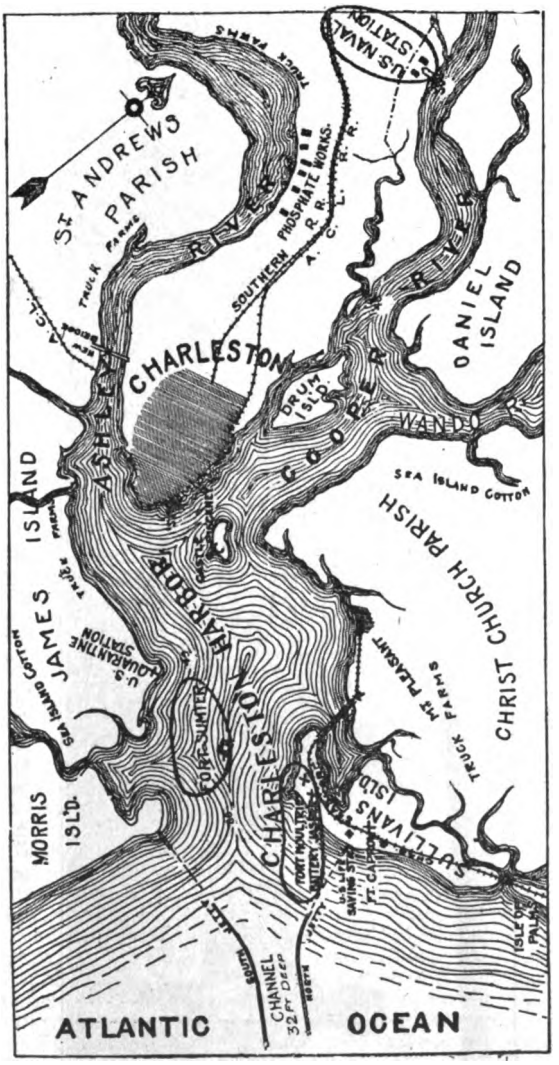
The Most Recent Effort.—Since the war nothing has been accomplished in the way of putting Charleston in touch with foreign markets until the efforts of the State Department of Agriculture, Commerce and Immigration brought an initial ship into Charleston harbor in 1906. As stated the first experimental ship in this service was the "Wittekind," of the North German Lloyd, which arrived at Charleston on November 4, 1906, bringing 476 immigrants, and a full cargo of German kainit. She carried back on sailing from Charleston on November 23, 10,349 bales of cotton, saving considerable in freight charges and affording a fine practical illustration of the incalculable advantages of direct service to the material interests of the South. A considerable quantity of miscellaneous merchandise was also carried. The first sailing was so successful from the steamship company's viewpoint that a second sailing of the same steamship took place, the ship arriving on February 9, in 1907. Unfortunately this sailing took place while the Department of Agriculture, Commerce and Immigration was without funds, in the legislative appropriation interim, and when the cotton season was such that the full return cargo could not be supplied. The result was unsatisfactory, and led to a cessation of the North German Lloyd's efforts to open the port of Charleston.

Following this event, P. H. Gadsden, Vice-President of the Chamber of Commerce of Charleston, and the Commissioner of Agriculture, Commerce and Immigration, the latter, after a consultation with President Roosevelt, in reference

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to the Federal immigration laws, went to Europe, but they were unable to induce the North German Lloyd's management to establish a permanent line, international trade conditions having greatly changed since the preceding summer.

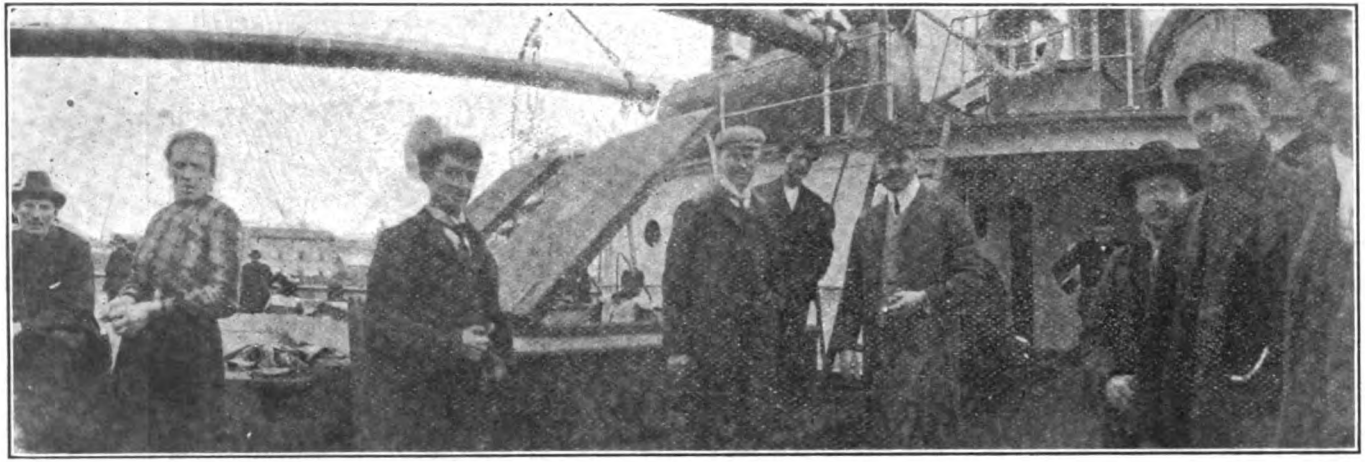
In August, 1907, the director of the North German Lloyd's third class passenger department, Baron von Pilis, having resigned in order to identify himself with other steamship enterprises, came to America, and visiting Charleston and other points in the State, announced that he was willing to undertake the establishment of the desired connections upon certain conditions. The business men



of Charleston were of the opinion that they could meet these conditions, and the announcement of a permanent line was made. The negotiations are still pending, however, and the ships are not yet regularly or irregularly coming to Charleston. The director referred to has for some years been an earnest advocate of the establishment of direct trade between European ports and the South Atlantic States, and has successfully established a permanent line of steamships to Galveston, Tex., and also to the Great Gulf Port of New Orleans.

As this is written, it looks as if the port of Charleston is soon to be opened as a result of the efforts made in 1906 in her behalf by the State of South Caro-

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ON THE "WITTEKIND" JUST BEFORE SHE LEFT BREMERHAVEN FOR CHARLESTON.

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lina, but it all now depends on the business people of the city of Charleston and the railroad interests involved.

Charleston's Commanding Position.—The port of Charleston has a commanding geographical location, the best on this continent, perhaps, and this is said with no reference to South America, Porto Rico, Cuba, the other islands of the West Indies, or Panama, in relation to which she is the premier. Take the great group of rail gateway points, for instance. She is nearer by rail than from New York or Norfolk to Kansas City, St. Louis, Louisville and Memphis; and almost 65 miles nearer to Cincinnati than is New York. She lacks only a few miles of being as near as either of these ports to Chicago—the air line distance being about the same. She is 146 miles nearer to St. Louis than is New York and 385 miles nearer Memphis. Again, Charleston is 125 miles nearer the center of population of the United States than New York.

Artificial conditions created by the nine Northern trunk lines are carrying a volume of business to the termini of these lines. Inevitably, when justice is forced, the main artery of freight traffic must follow the actual short haul. There is no reason in all justice why Western wheat, flour and corn and many other products should not seek the natural short haul outlet for export. The same thing is true of imports that go to the same section through St. Louis, Kansas City, Louisville and Cincinnati. The trunk lines have wisely, from their standpoint, and successfully, used every endeavor to concentrate all export and import freights at their respective ports.

With long hauls made possible through the port of Charleston, conditions now existing are likely to change with startling rapidity. It suffices to say, also, that no other South Atlantic port is so located in its relation to the ocean that it can for many years become even a competitor of Charleston, with railroad traffic conditions readjusted on the basis of the regular export and import steamship lines from Charleston to European points. In past years grain was shipped to Charleston, but there were no ships sufficiently large to handle the business at a profit.

A Matchless Harbor.—As to Charleston harbor itself, United States official charts of the harbor show a depth at low water of 26 feet and a high water depth of 31¼ feet, and the jetties are so constructed as to gradually better these figures as time rolls on. Accompanying is a chart of the harbor. It only requires about 30 minutes to run from the open ocean to the export piers of the city, the distance being a little over six miles. The channel is broad and very nearly straight. In nearness to the open ocean, Charleston excels even New York. Less depth and sharp bends in the channels from the ocean into the ports of Wilmington, Savannah and Brunswick make it impossible for larger and longer vessels to be operated from these ports than those now in use, while the depth and width of the channel into Charleston is equal to that of Baltimore and deeper than the channels into Newport News and Norfolk.

Charleston is the only port on the middle South Atlantic seaboard where it does not require two tides for a large vessel to enter and clear upon. For this reason alone she must sooner or later become a much-used coaling station. With the removal of one small bar just outside the main bar, which can be accomplished with an appropriation of not over $300,000, the depth of low water on Charleston bar can be made 30 feet instead of 26.

The Real Advantage.—Without touching the broader facts as to the expansion of the markets for Southern crude cotton and cotton manufactured product, let us glance at the effect the opening of trans-Atlantic service at Charleston will have on the export trade of crude cotton, and see wherein will be Charleston's advantage over adjacent ports, even Norfolk, and wherein the exporter will reap a harvest by means of direct exportation instead of the present system of exportation via New York and Norfolk. In studying what is said the reader should note the chart herewith, which uses Montgomery as the central shipping point.

The system of making rates on cotton for export from common shipping points in the south of Europe, as now prevailing, provides for the same rate per hundred pounds through all the South Atlantic seaports. Thus the ocean rate from Norfolk, Va., is five cents less than the ocean rate from Wilmington, N. C., Charleston, Savannah and Brunswick, Ga., and the railroad rate to Norfolk is correspondingly higher than to these other ports.

Much larger vessels are used from Norfolk than from the other ports (which use vessels of only 2,000 and 3,000 tons), and while 30 cents per hundred pounds on cotton from Norfolk pays a larger steamer a fair profit, the smaller steamers from the other ports require at least 35 cents per hundred pounds, their owners and agents claiming that 30 cents per hundred pounds would merely keep their ship in repair, and not pay any returns on the investment.

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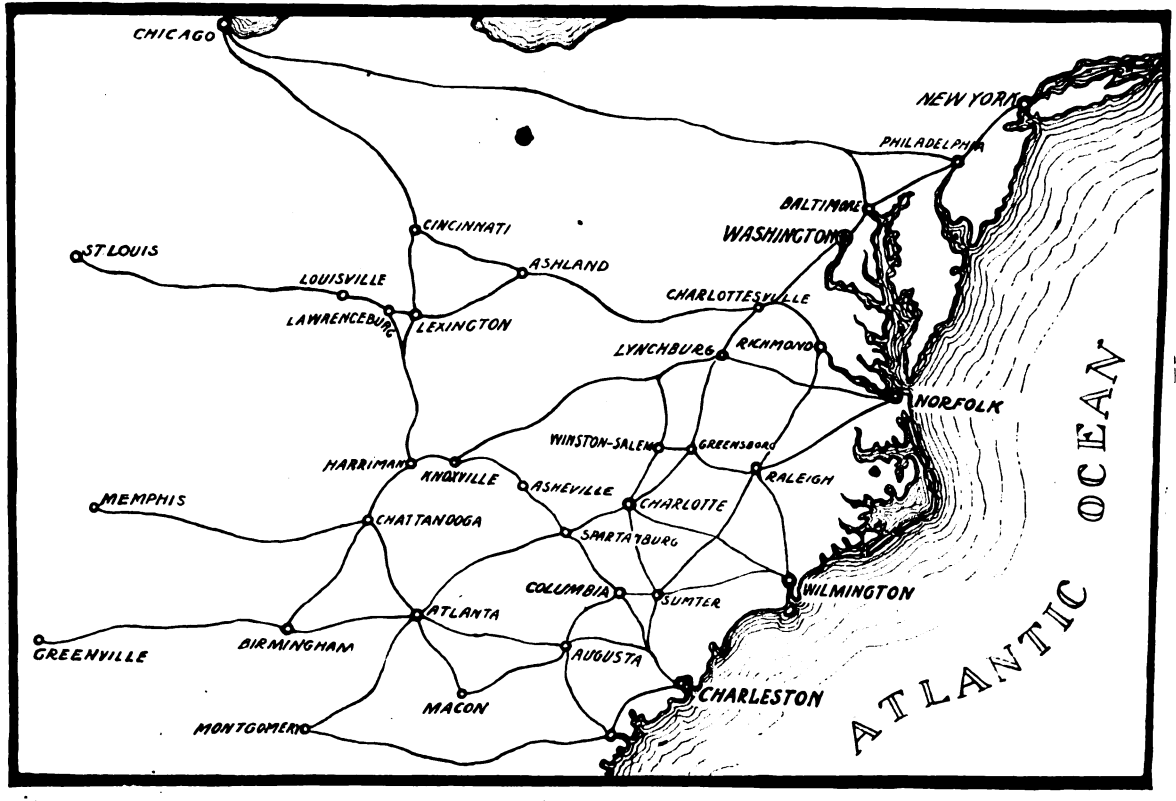


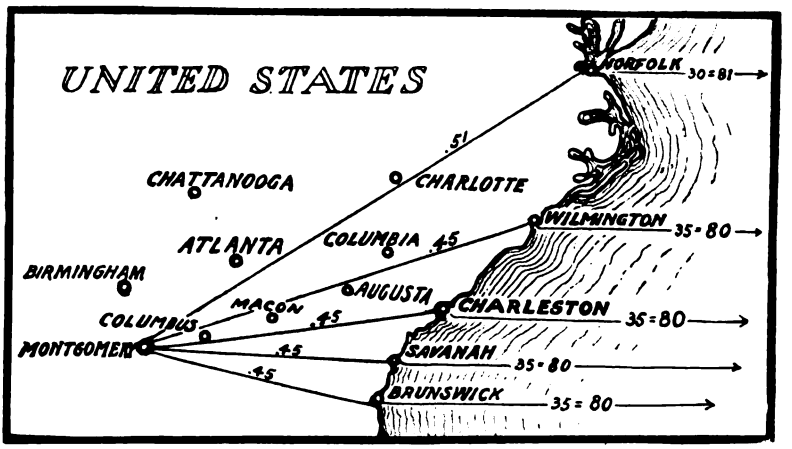
CHART SHOWING RAILROAD ARTERIES FROM WESTERN GATEWAYS AND COTTON BELT POINTS TO EXPORT AND IMPORT PORTS.

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In view of these facts, it can be readily seen that steamship owners operating vessels from the port of Charleston, of the same size or larger than those operating from Norfolk, can get a good profit carrying cotton at the same ocean rate as now prevails from Norfolk.

Under the present system of rate, steamers carrying cotton from the port of Charleston, at the same ocean rate as from Norfolk, would create new rate conditions, *i. e.*, either the railroads would increase their rate to Charleston to the same as Norfolk, and, the distance being 300 or 400 miles less, it would be greatly to the profit of the railroad to have as much cotton go via Charleston as possible, as they would receive the same rate for a less distance; or, on the other hand, should it not be possible by their system of making rates for the railroads to increase the rate to Charleston, then the lower ocean rate from Charleston would result in a saving to the exporter of cotton of five cents per hundred pounds on similar shipments through Wilmington, Savannah or Brunswick, and they would naturally send the greatest part of their exports through Charleston.

The rates on cotton by large steamers from New York to European ports ranges from 15 cents to 20 cents per hundred pounds. It would, therefore, be a very profitable business for vessels of the same size to get 30 cents per hundred pounds for full cargoes of cotton from the port of Charleston.



To summarize: This all means that tramp steamers must have 35 cents in order to live, while the regular liner of a size Savannah cannot handle could make a good profit at 30 cents. As against the system of shipping for export by coastwise steamer and via New York, which system now generally prevails from Charleston, the difference would be about 10 cents a bale in favor of the direct export, transfer charges at New York included. In view of these facts, the value of such a direct service to every shipper of cotton in the Eastern cotton belt is apparent at a glance.

Tramp Service.—Tramp steamers as are now used in the direct cotton export service require sometimes as much as 27 days to load and reach destination. Cotton going via New York only requires 15 days; hence exporters prefer that route. With direct service this item of time would be still further reduced, and there would be a saving, owing to the fewer handling. What has been shown in regard to crude cotton can be shown still more forcibly in the matter of shipping the manufactured product of the Southern cotton mills to the markets. At present the system of marketing is most expensive. Shipment to Europe and thence, with one transfer alongside ship, would be accompanied by a great saving in rates, in damage to product and in commissions.

What can be accomplished in the matter of the getting of the cotton waste products of the South's cotton mills on the market by direct export—a matter now being carefully looked into—may be gathered from the fact that the upwards of $2,000,000 worth of these products now exported annually, largely in Germany, is shipped almost entirely through Boston, 50 per cent., and New York, 30 per cent., and so it goes.

Recently in Philadelphia the keynote of all the addresses was found in an oft-expressed desire for the Southern cotton grower and the Southern cotton

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manufacturer to get together and work together for their mutual benefit. The manufacturer and the grower are now clamoring, and justly, for an extension of the markets in foreign fields. How this necessity of the hour can be better met than by direct steamship service from the heart of the Eastern cotton belt to European ports it is difficult to imagine.

At the last convention of the association of the Southern Commissioners of Agriculture the opening of such service was most vigorously urged.

Charleston's Imports.—Charleston's import business for the past two years has exceeded the import business of any other South Atlantic port, not excepting Norfolk, though her export business has been far behind. This year's record promises to be far better. Here is a comparative statement of imports that speaks for itself.

IMPORTS.	1905.	1906.
Charleston	$2,478,156	$2,751,482
Savannah	1,488,692	1,503,069
Norfolk	801,709	790,231
Newport News	2,154,650	2,630,317
Wilmington	437,242	503,385

Of course there has been, and, as the import business grows with direct service, there will continue to be a steady development of Charleston's jobbing trade. She would become an ideal distributing point.

And why should she not, when she has her direct service supported by the railroads, interest the large importers in New York city to establish distributing warehouses in Charleston and handle their Southern and Southwestern business through such houses?

Charleston ships out a large quantity of bagging. More freight, based on imported ingredients, originates in Charleston and is shipped out from Charleston to interior points than from any other South Atlantic port. She sends to the interior, I believe, some 40,000 carloads of fertilizers annually. Would it not be to the interest of the railroads, working with a trans-Atlantic line, to haul freight for export into Charleston instead of carrying empty cars into that port for the purpose of handling the one-way movement? It is true fertilizers are moving only during certain months in the year, but during this off-period fertilizer material—ingredients—is being distributed to interior mill points.

The Export Business of Charleston has dwindled most deplorably since 1890, while the import business has been increasing. The accompanying table, however, shows the figures for the period from 1890 to 1906.

MERCHANDISE IMPORTED AND EXPORTED AT THE PORT OF CHARLESTON FOR THE YEAR ENDING JUNE 30.

	Exports,	Imports.			Duty
	Domestic.	Free.	Dutiable.	Total.	Collected.
1890	$13,788,751	$ 619,368	$ 27,276	$ 646,644	$16,540
1895	10,712,471	633,048	33,668	666,752	27,253
1900	7,151,720	903,073	221,598	1,124,671	70,117
1901	7,084,215	1,369,877	107,842	1,477,719	34,054
1902	5,857,364	1,498,512	91,566	1,590,078	25,580
1903	4,620,930	2,182,773	114,689	2,297,462	44,745
1904	2,330,675	1,531,388	154,444	1,685,832	50,235
1905	3,358,725	2,320,985	157,171	2,478,156	46,461
1906	661,285	2,719,854	31,628	2,751,482	13,607

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Coastwise Service

This subject is most vitally touched upon in the brief treatment of river service. However, the Clyde Line, owing largely to the recommendations and activities of the former general manager, Theo. G. Eger, maintains a fine regular freight and passenger service between New York and Charleston, there being a number of steamers per week, having an important bearing upon the commercial business of Charleston and the State as a whole. In addition to this, the Clyde Steamship Company has a fine freight service between New York and the port of Georgetown, which service at present coöperates with the Columbia river line and the Conway line, and is soon to give Cheraw its benefits. To Georgetown also, is operated a splendid line of steamships from Baltimore, which are coöperating to the fullest extent with existing river lines and producing the best results to interior merchants. This line has steadily developed its business since its inauguration, which is very recent.

The State, through the Department of Agriculture, Commerce and Immigration, has aided in the development of the passenger business of the Clyde line between New York and Charleston, and has found the management ready and willing to offer inducements in this regard.

Quite a number of persons, with all their household effects, have been brought to South Carolina by the Clyde ships, and recently one shipment of household effects came via Clyde to Georgetown, and thence, by Congaree River steamer, to Columbia.

The business of the Clyde's Charleston line, which was run in connection with Jacksonville, Florida, has developed so rapidly that frequently of recent years the company has had to put new ship from time to time into the service. Thousands of tons of merchandise for interior points are shipped from New York and the East via this line. At present the company operates six large passenger ships in this service, the "Apache," the "Arapahoe," the "Comanche," the "Huron," the "Iroquois," and the "Algonquin," there being four sailings per week each way. In addition to this service, the steamships "Mohican," "Kathadin," "Chippena" and "Onondaga" are often operated to and from Charleston and New York, carrying freight only. These last named ships, also, are used in the regular freight line operated by the Clyde Company between Charleston and Boston direct. This last line does a splendid business between the South and the New England States. No attempt is here made to go into the details as to the classes of freight that are handled over these coastwise steamship lines other than to say that going south merchandise and manufactured articles of all kinds are brought, and that going north the steamers carry cotton, turpentine and rosin, phosphates, cotton manufactured products and such other articles as this territory is furnishing to the markets of the world.

The Georgetown Lines.—The Clyde line from Georgetown is doing an excel- business which is steadily increasing. The new line only recently established to Baltimore independently of the Clyde's has also met with such success that within the apparently short space of time it has been in operation it has been necessary to add new steamers.

An extensive coastwise schooner service is operated by the Atlantic Coast Lumber Company, which has such extensive interests at the port of Georgetown, the company's lumber plant being one of the largest in the United States.

From the ports of Charleston, Georgetown and Beaufort numerous American schooners are from time to time engaged in the transportation of products, particularly lumber, and occasional coastwise steamers find their way with profit into these ports.

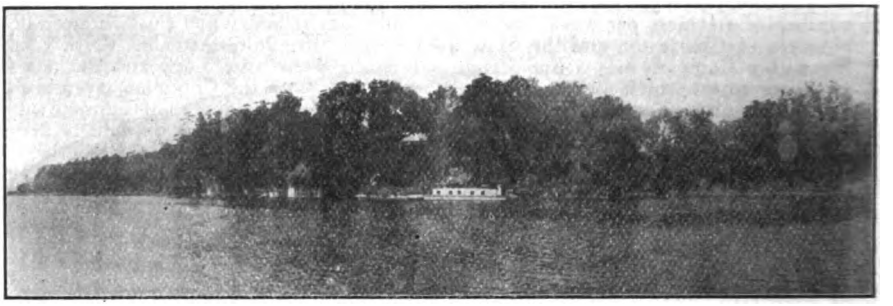
The Commerce.—In any treatment of the subject of coastwise service the navigation of the inland waterways along the coast naturally requires close attention. The improvement of these waterways has become a governmental function, owing to the necessity for clear channels in time of war, and as the improvements go on their immense value to the commercial and agricultural interests to the coast section steadily increases. Of course the governmental scheme for the improvement of these waterways very properly includes all of the navigable riverways tributary thereto. The annual report of the United States

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Captain of Engineers for the fiscal year 1906 gives the following interesting figures as to the commerce of the principal waterways:

"Through the waterways between Charleston and McClellanville the freight, including fertilizers, oysters in shell, and miscellaneous merchandise, towards McClellanville, aggregating 13,805 tons of the value of $192,926. The freight towards Charleston included sea island cotton, short staple cotton, vegetables, lumber, turpentine, rosin, oysters, clams, canned goods, etc., amounting to 44,616 tons, worth $415,835, making a grand total of 58,421 tons of the value of $608,761.

"The freight through the inland waterways between Charleston and Beaufort, including Wappoo Cut, was similar to that moving through the Charleston and McClellanville route, aggregating a grand total of 186,053 tons, valued at $2,929,893."



BOATING ON THE COOPER RIVER.

The commerce of the coast section is steadily increasing, and as the waterway improvements are persevered in, the volume of this commerce may be expected to advance very rapidly.

Regular lines of steamers are operated, notably one by the Sea Island Steamship Company, between Charleston and intermediate points and Beaufort. There is also boat service between Charleston and Georgetown, and from Beaufort a regular line of steamers is also operated through the inland route between that port and the port of Savannah. A small steamer, also, is operated regularly between Beaufort and Port Royal and the fort in Port Royal harbor.

Notwithstanding its natural superiority as a port, Port Royal is at present without any regular coastwise or foreign service of any description, though there are always schooners and steamships in the harbor loading with lumber and other products.

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3

River Service

The river service of this time is creditable. In 1903 the Congaree was again opened to navigation, after having been closed to such service for many long years, and this meant the application of water freight rates to the heart of the State from New York, Boston, Philadelphia, Baltimore and Pittsburg by reason of the connection of the Congaree boat line at Columbia with the Clyde Steamship Company's line at the port of Georgetown. This has been the most important inland water transportation event of recent times, its full value scarcely yet being fully appreciated. Through the work of the Columbia Chamber of Commerce the line was opened, the first boat, "The Highlander," being brought down from Fayetteville, N. C., under her own steam and placed on the Congaree in the spring of 1904. With proper efforts in New York, the water rates were secured through the active intermediate of the State Department of Agriculture, Commerce and Immigration. Up to this time Columbia was an impossibility as a distributing or wholesale center, Augusta, Savannah and even Atlanta selling under possible Columbia prices up to within fifteen miles of the city. Since this event one Columbia wholesale house has been selling in fifteen States.

The first boat was accidentally destroyed by fire on the Santee, this accident occurring the very day the reduced rates on cotton manufactured product were secured in New York. Since then the business interests of Columbia have builded and are operating regularly their own steamer, the "City of Columbia," and a great impetus has been given the wholesale and distributing business. Additional steamers are now needed. All interior towns within a radius of fifty miles of Columbia have benefited.

Recently Cheraw has put on one boat operating on the Pee Dee, and expects at once to construct another. There is every indication that a line to Camden on the Wateree is also to be established. That they will have an effect similar to the Columbia line goes without saying.

Regular boat lines are operated on the Cooper and the Ashley.

From Charleston there are numerous river and inland waterway lines and lines to the sea islands, notably a line to Beaufort and one to Georgetown.

From both Beaufort and Georgetown river lines are in operation. From Beaufort steamers are operated to Charleston and also to Savannah, as well as up the rivers tributary to Beaufort, and to the Federal Fort in Port Royal harbor. From Georgetown there is steamer service through the inland waterways to Charleston, and river steamers on the Wateree, Pee Dee, Black and Congaree Rivers do a fine business.

The commerce of the port of Georgetown, as affected by river navigation, at this time is most encouraging.

The present fiscal year not yet being terminated, the statistics are not yet made up, but from the last annual statement of Capt. George P. Howell, Corps of Engineers, U. S. A., in charge of all river and harbor work, the outward tonnage on Waccamaw River, including cotton, naval stores, lumber, fish, game, vegetables, rice and miscellaneous freights, aggregates 187,730 tons of the value of $1,836,750. The inward tonnage of fertilizers, railroad iron, etc., 19,900, of the value of $829,167, making a grand total of 207,630 tons of the value of $2,665,917. The work on the Little Pee Dee is a part of the project of the Waccamaw River, and the tonnage on this river, similar to that on the Waccamaw, during the year aggregated 87,985, valued at $663,650.

The tonnage on the Great Pee Dee was 128,869 outward, and 20,000 tons inward, making a total of 148,869 tons, valued at $1,618,551.

Commerce through Winyah Bay, involving a project of a fifteen-foot mean low water depth to the port of Georgetown, aggregated 363,916 tons of the value of $10,401,879.

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THE "COLUMBIA" AT GRANBY ON THE CONGAREE.

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The tonnage on the Santee River showed a grand total of 329,350, valued at $1,485,000; Wateree, 22,000 tons, $41,000, and Congaree, 34,350 tons, $252,000.

Domestic Exports, for Year Ending June 30, of Georgetown.	
1890	$ 22,436
1895	14,985
1901	5,500
1902	2,202
1903	17,083
1904	23,750
1905	56,117
1906	12,282

The Sampit, the Waccamaw, the Pee Dee, the Santee and the Black Rivers, with their tributaries, water an area of about 65,000 square miles of territory, of which about 12,000 are in North Carolina, and about 53,000 in South Carolina, having a total length of several thousand miles, and a total navigable length (the greater part only serving certain seasons of the year) of about 900 miles, traversing or touching many counties in North Carolina and about three-fourths of all the counties in South Carolina.

This entire system of waterways converges in Winyah Bay, at the port of Georgetown, the bay having a varying width of one to five miles and a length of eleven miles and affording ample and safe accommodation from its head, at the city of Georgetown, to its point of discharge into the ocean, for an almost unlimited tonnage, with the exception of equality, continuity and sufficiency of depth in its main channel throughout its length.

The depth of the water in the bar or ocean entrance to this great system of waterways, although greatly improved by the jetties constructed by the United States Government thereat, within the last fourteen years, causing an increase of depth from eleven feet (when said construction was commenced) to eighteen feet at the present time, is not commensurate with, or proportionate to, the scope and needs of the system, even in its present state, and far from adequate for the demands of the vastly increased commerce which must certainly develop by improved and augmented navigability.

Exports and Imports of Beaufort for Year Ending June 30.

	Domestic Exports.	Imports. Free.	Imports. Dutiable.	Imports. Total.	Duty Collected.
1890	$1,140,656	$ 24,269	$ 85	$ 24,354	$ 33
1895	5,777,745	73,953	3,828	77,781	1,645
1900	189,908	81,030	12	81,042	3
1901	129,639	192,135	.....	192,135	.....
1902	183,234	132,340	.....	132,340	.....
1903	181,794	116,510	.....	116,510	.....
1904	131,991	142,836	.....	142,836	.....
1905	53,650	.....	3	3	.....
1906	87,305	.....	.....	.....	.....

History.—Water transportation facilities undoubtedly reached their maximum just before the advent of railroads, in 1830-33, and no better resumé of the situation could be given than that by Mills in his "Statistics" in 1826. He says:

"The Savannah River divides this State from Georgia. It has a ship navigation eighteen miles, from the ocean to the city of Savannah, and good steamboat navigation 140 miles further, to Hamburg and Augusta. Above these places, 100 miles to Andersonville, the river, thirty-three miles of rapids, with a fall of about eight feet to the mile, on a regular inclined plane; the other sixty-seven miles is smooth, deep water. Boats descend from Andersonville with seventy bales of cotton, or ten tons. The Tugaloo is navigable for similar boats twenty-five miles, to Pulaski, and the Seneca twenty-six miles, or six miles above Pendleton court-house. At the junction of Twelve Mile Creek the Seneca changes its name to Keowee, which is capable of being made navigable entirely within the mountains by merely sluicing. The Tugaloo branch of the Savannah rises in the mountains, a short distance from the Hiwassee, a navigable branch of the Tennessee river. By means of these streams it is believed the Southern Atlantic may be connected with the Western States by a navigable canal. The general government have ordered surveys to be made to ascertain its practicability.

"The Santee River enters the ocean by two mouths. There is a good steamboat navigation on this stream to the junction of the Congaree and Wateree, and up both these rivers to Camden and Columbia. (The Wateree changes its name to Catawba at the Wateree Creek.) This river above Camden to the

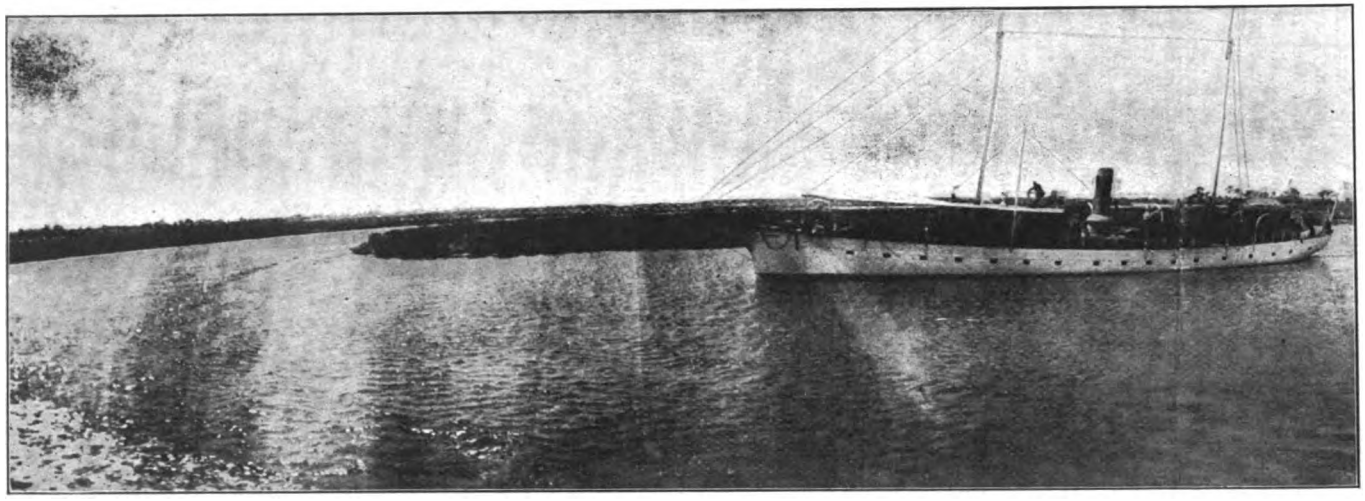
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North Carolina line, is interrupted by four principal falls, around which canals have been cut, except at Rocky Mount, where the work is now going on. The first fall is at the Wateree Canal, which is five miles long, with a width of fifty-two feet, and having six locks; the second is at Rocky Mount, where there is a fall of 121 feet, requiring thirteen locks. The canal here is cut the greatest part of the distance. The third fall is at the Catawba Canal, where there is a fall of fifty-six feet in three miles. The canal and seven locks here are finished. The fourth fall is at Lansford, where a canal two miles long, with five locks, completes the navigation. Above this the river has rapids, but the small boat navigation can be extended with care within the Alleghany Mountains. The Congaree is formed by the confluence of the Broad and Saluda rivers, where there is a fall of thirty-four feet, which is overcome by a canal three miles long, and five locks. On the Broad River, the navigation for small boats extends to King's Creek, with the aid of Lockhart's Canal, which overcomes a fall of fifty-one feet by seven locks in two miles. Above King's Creek there are several rapids and extensive falls; locks would be requisite to make good navigation here, and when these are once passed, the navigation to the foot of the mountains is only obstructed by a few rapids. Green River, a main branch of Broad River, extends to a point in the Blue Ridge (properly the Alleghany) where this mountain is very low and narrow; on the opposite side of the mountain rises the French Broad, a large branch of the Tennessee. It is confidently presumed that the Atlantic and Western waters may be united here by a navigable canal with great comparative ease.

"The Saluda River is navigable 120 miles above Columbia. There are three canals on it: 1st. The Saluda Canal, two miles and a half long, with five locks, overcoming a fall of thirty-four feet. 2d. Drehr's Canal, one mile long, and with four locks, overcoming a fall of twenty-one feet. 3rd. Louck's Canal, which has a single lock of six feet lift. The Pee Dee river rises in North Carolina (where it is called the Yadkin), and enters Winyaw Bay, above Georgetown. To Cheraw, above 120 miles from the ocean, it has a good steamboat navigation; from Cheraw to the North Carolina line, nine miles, there is a fall, on a regular inclined plane, of eighteen feet, and above that line the rapids extend to the narrows, about seven miles by water, where the fall is very great. Above the narrows to the mountains this river is represented as favorable for small boat navigation. It heads near New River, one of the main branches of the Great Kenawha. The Little Pee Dee rises in the sand hills in North Carolina, and is navigable from Lumberton. The Black River is navigable to the line of Sumter district, about sixty miles from its entrance into Winyah Bay. Lynch's Creek is navigable eighty miles, and Black Creek thirty miles from their junction with the Big Pee Dee. The Edisto discharges into the ocean by two mouths, called North and South Edisto inlets. It rises in the region of sand hills in two branches, which unite below Orangeburg; both branches and the main river are navigable, having no shoals. It has been contemplated to unite this river with the Ashley, by a canal fourteen miles, extending from near Givham's Ferry to Dorchester. The Edisto will form the feeder; the ridge between the two streams is only thirteen feet high, and less than a half mile through. This canal will save eighty miles of difficult, and, in some places, dangerous navigation between the upper Edisto and Charleston. The Combahee has a schooner navigation to Saltcatcher bridge, and the main Saltcatcher is navigable for boats ten miles higher. It may be made navigable to Barnwell court-house by merely removing logs which now obstruct it. The Waccamaw River rises in Waccamaw Lake, near Cape Fear River. From this lake it is navigable for boats to Conwayborough, and from that place to Winyah Bay it is navigable for schooners. From Winyah Bay to Santee River the Winyah Canal, six miles long, has been partly executed, and from the Santee to the head of the Owendaw there is good schooner navigation. From the head of the Owendaw to schooner navigation on the Wando, the distance is about eight miles, a canal here would require only eight feet depth of digging to be fed with the tide water. Wando River enters Charleston harbor.

"From Charleston to Savannah there is a steamboat navigation between the islands and the main, with the exception of about half a mile between the Broad and the Savannah rivers, where a canal is now cutting. Hence it will be seen that with fourteen miles of canaling, a good steamboat navigation, entirely inland, and parallel to the coast, may be effected from the North Carolina to the Georgia lines. It is supposed that five locks will be all that are necessary. This work has been estimated at less than $250,000. It would appear to fall within the system of internal improvement contemplated by the general government. The Ashepoo has a schooner navigation to the Ashepoo Ferry. The Ashley River enters Charleston harbor on the southwest of the

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IN THE INLAND WATERWAY.

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city, and is navigable for schooners to Dorchester, twenty miles. The Cooper River is a good navigable stream to the entrance of Biggin Creek, thirty-four miles by land from Charleston. From this point to the Santee River, the Santee Canal, twenty-two miles long, has been constructed, passing a summit sixty-nine feet above tide waters in Cooper River, and thirty-four feet above the Santee. There are on this canal thirteen locks. A great part of the produce from the upper Santee, Congaree, Broad, Saluda, Wateree and Catawba rivers pass this canal in boats carrying one hundred and twenty bales of cotton or twenty-five tons of merchandise.

"It is said that upwards of three million dollars was expended in the internal improvements thus described, without estimating the value of the labor assessed upon the localities adjacent to the works. In spite, however, of State expenditures, in spite of roads, bridges, and ferries, in spite of canals, companies and steamboats, in spite of patriotism and State pride, the trade of upper Carolina could not be permanently retained by Charleston."

The cause of the latter is given below. In 1826 there were 10 steamboats operating between Charleston and the towns of Augusta, Hamburg, Savannah, Georgetown, Cheraw and Columbia, their average capacity being 600 bales of 320 pounds each; but some of the boats carried as many as a thousand bales. From Columbia and above Columbia (by utilization of flatboats and the Columbia Canal) about 55,600 bales annually went to Charleston; Camden sent 40,000 bales and from different landings went about 15,000 bales. Hamburg and Augusta sent 37,500 bales and by wagons enough reached Charleston to make the total 200,000 bales. The freight charges, including Santee Canal charges, averaged from $7 to $12.25 per ton, and up-freights $10 per ton.

Conditions Bring Changes.—The foregoing is utilized in order that the causes inducing the introduction of rail transportation may be understood. With the mechanical appliances available at that period water transportation was both slow and costly. Railroads reduced both. Today the revival of interest in water transportation is due to exactly the same cause, with conditions reversed. Water transportation through modern inventions is now cheaper than rail transportation and almost as convenient and improvements of service are of almost daily occurrence. As a natural consequence of economic law there is a renewed interest in navigation, and what is more gratifying whenever navigation is introduced it is accompanied by the upbuilding of communities and rapid development of the business of connecting rail lines.

The period's activity showed the desire for better transportation facilities and was the logical and proper step to the age of railroad transportation, which had its real beginning in 1833.

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4

Railroad Service



Today South Carolina has as fine railroad facilities as any State in the Union, with the Capital City as a hub, and lines radiating in every direction. Through the State pass the North-to-South main lines of the three great railway systems connecting Washington with Florida, the Southern, the Atlantic Coast Line and the Seaboard Air Line. Each has numerous branch lines. The Southern has more of its mileage in South Carolina than in any other Southern State. The passenger rate is 3 cents per mile, but is soon to be voluntarily reduced. The mileage of the railroads in this State in 1882 was 1,600. Since that time it has grown until today it is 3,207.71. In 1821 the cost of transportation of freight per ton per mile was 17 22-100 cents, in 1882 it had fallen to 2.7 cents per ton per mile.

The tale of our State's progress is told in a few simple comparisons. The total gross earnings from railroad transportation in 1833 was $160,907.51. Seventy years later there was earned in the State $11,785,946.52. In 1833 there were 136 miles of road in the State with wood track, in 1903 there are 3,064 miles of steel track; the largest engine then weighed four and a half tons and ran under its load capacity 18 tons at the rate of ten miles per hour. Engines of today weigh 80 tons, run from seventy to eighty miles per hour with a load of three thousand tons.

MILEAGE OF RAILROADS—JUNE 30, 1905-1907.

Official mileage, 1905	3,159.87
Private mileage, 1905	20.00
Total mileage, 1905	3,179.87
Per cent. proportion to total mileage in United States, 1905	1.46
Increase of mileage over preceding year (1904)	4.59
Miles of line per 100 square miles of territory	10.54
Miles of line per 10,000 inhabitants	21.86
Official mileage, 1907	3,207.71
Increase over 1905	47.84

There is scarcely a section of this State today that is remote from railroad transportation. There are many places, however, that are paying the railroads a higher rate for freight than they should, simply because they have not availed themselves, under modern conditions of ship building and operation, of the navigable streams at their doors, and put steamboat lines into operation, thus applying competitive rates automatically, as it were. At this time this, however, is being realized, and one interior point after another is seizing the opportunity.

At this time also there is as has been shown in preceding chapters a general awakening to the immense value of the opening and operation of the inland waterways on the coast, and the Federal Government is taking an active and substantial interest. Improvements are now in progress that mean a great deal to the future commerce of this State, the railroads and inland waterway lines of course operating in conjunction with the service on the several river courses with the several ports.

Nothing in South Carolina's recent history has been more conspicuous than the attempt begun in the summer of 1906 to open the naturally great port of Charleston, long dormant and unmindful in the opinion of the outside world of its own advantages, to the commerce of the world. Strenuous efforts have been made by the State to establish a permanent trans-Atlantic service, with the view of making Charleston the chief import and export port of the South Atlantic States. The desire for immigrants in the South has been made use of by the State Department to aid in this accomplishment, which seemed impossible as a plain commercial proposition owing to Charleston's long period of commercial inactivity, the causes of which are discussed elsewhere.

In the matter of transportation the business of river lines, coast steamboat lines and railroad lines, and in the matter of immigration so much depends upon the successful establishment of trans-Atlantic service, with Charleston as

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the port of entry, that there is nothing connected with the economic situation, agricultural, commercial or industrial, that should command more careful, earnest, thoughtful and painstaking attention at this epoch in the State's history.

Always Encouraged.—The immense value of railroad transportation to the people of the State and to the Commonwealth itself has always been fully realized in South Carolina. The growth of railroads since the pioneer line was built in 1833 has been steady and substantial and the policy of the State has ever been one of encouragement. With less than a thousand miles of road in operation when the Civil War began, South Carolina has more than trebled the mileage, and the actual value of the railroad property now in the State exceeds probably $76,000,000. The accompanying table shows the rapid growth of the mileage, the principal increase accompanying the extensive manufacturing development in the decade between 1880 and 1890. The railroads own and maintain, at different points in the State, extensive repair and construction shops, which give employment to many skilled workmen. A statement as to these is found in the chapter on Manufacturing.

ESTIMATED ACTUAL VALUE OF RAILROAD PROPERTY IN SOUTH CAROLINA—1904.
(U. S. Census.)

Commercial value of railway operating property as of June 30, 1904	$75,500,000
Per cent. of total for United States	0.709
Rank of State	43
Number of miles of single track	3,175.28
Average value per mile	$23,800
Value as assessed for purposes of taxation, 1903	$29,467,716
Ratio of assessed to commercial value	39.

MILEAGE OF RAILROADS IN OPERATION.

Year.	Miles.
1860	973
1870	1,139
1880	1,427
1890	2,289.15
1900	2,919.31
1903	3,112.48
1904	3,146.24
1905	3,184.19
1906	3,186.58
1907	3,207.71

Electric Railways.—Conspicuous and of vast importance in railroad transportation has been the advent of the electric railway. Beginning about 1896, being a development of street railways with cars drawn by horses, which were introduced first in Charleston about 1870, the construction of such municipal interurban lines progressed so rapidly that by 1905 about three million dollars of capital was invested in such lines and there were in daily operation about 158 cars moving over 129 miles of trackage. Noteworthy accomplishments have been the building of the interurban lines between Aiken and Augusta, and between Anderson and Belton. The service is rapid and continuous and is of incalculable value. Charleston, Columbia, Spartanburg, Greenville and Anderson all have fine electric city and suburban electric lines, and a number of other towns are arranging to construct systems. There is contemplated, also, a network of long-distance electric lines to connect the principal cities and towns of the State. The accompanying figures for 1905 give an idea of the rapid growth of electric line transportation facilities.

STREET AND ELECTRIC RAILWAYS—1905.

Number of roads	8
Track mileage	129
Other mileage	5
Number of cars	158
Capital stock	$2,848,000
Funded debt	$5,180,000

The present steam railroad mileage of the railroad lines in South Carolina are shown in the accompanying table, the figures being those of 1907 as gathered by the State Railroad Commission.

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RAILROADS AND MILEAGE, 1908.

A. C. L. System.

	Miles.
Ashley River Railway	4.00
Central of South Carolina	40.20
Charleston and Savannah	85.25
Charleston and Savannah, Sea Island branch	5.70
Charleston and Savannah, Sea Island spur	15.32
Charleston and Western Carolina	319.18
Cheraw and Darlington	39.52
Cheraw and Darlington, Gibson branch	35.76
Cheraw and Darlington, Salisbury branch	11.10
Florence	24.63
Florence, Latta branch	19.78
Green Pond and Walterboro branch	14.00
Hartsville	10.00
Manchester and Augusta	98.50
Manchester and Augusta, Darlington branch	37.64
Manchester and Augusta, Lucknow branch	16.48
Manchester and Augusta, Pregnalls branch	46.97
Northeastern	101.70
Pacific	10.50
Walterboro and Western	23.67
Wilmington, Columbia and Augusta	12.14
Wilmington, Columbia and Augusta, Conway branch	25.00
Total	997.04

Seaboard Air Line.

Chesterfield and Kershaw	54.906
Florida, Central and Peninsular	103.647
Georgia, Carolina and Northern	135.712
Palmetto	11.300
South Bound Extension	36.220
Total	341.785

Southern Railway.

	Miles.
Atlanta and Charlotte Air Line	124.99
Asheville and Spartanburg	24.00
Blue Ridge	44.00
Carolina and Cumberland Gap	24.10
Carolina Midland	128.55
Carolina Midland, Seivern branch	7.94
Charlotte, Columbia and Augusta	96.40
Charlotte, Columbia and Augusta	82.35
Columbia and Greenville	143.34
Columbia and Greenville, Abbeville branch	11.58
Lockhart	13.82
Seivern and Knoxville	17.44
South Carolina and Georgia	203.60
South Carolina and Georgia, Camden branch	37.10
South Carolina and Georgia Extension	118.30
Sumter and Wateree	15.81
Spartanburg, Union and Columbia	68.00
Total	1,161.32
Alcolu	25.00
Augusta and Aiken	22.69
Branchville and Bowman	11.00
Raleigh and Charleston	19.48
Carolina and Northwestern	37.00
Charlotte, Monroe and Columbia	18.00
Chesterfield and Lancaster	18.00
Columbia, Newberry and Laurens	75.00
Conway Coast and Weston	30.56
Charleston Terminal Company	5.28
Glenn Springs	10.00
Georgetown and Western	36.00
Hampton and Branchville	21.00
Lancaster and Chester	28.60
Northwestern	65.30
Pickens	9.00
Bennettsville and Cheraw	14.50
Carolina and Western	7.00
Total	453.41
Greenville Traction	11.376
Union and Glenn Springs	19.20

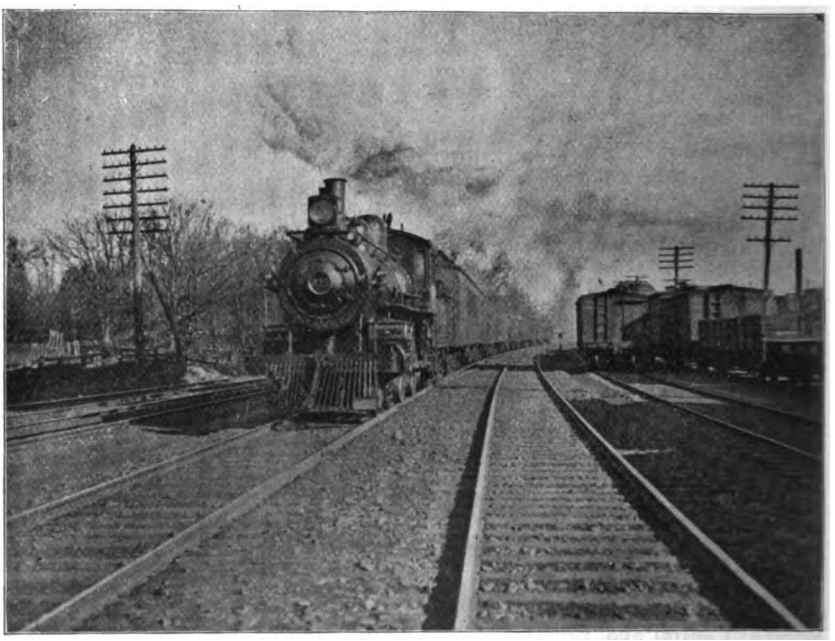
South Carolina the Pioneer.—In speaking of the merchants of Charleston Trenholm proclaimed in 1884: "They projected the first railroad in the Western Hemisphere intended exclusively for the utilization of steam power, and actually built, equipped and operated what was then and for several years afterwards the longest railroad in the world." Space forbids an extensive historical sketch of the intensely interesting facts connected with railroad construction in South Carolina. It is worthy of note that when the pioneer railroad was first built to Hamburg, both Charleston and Augusta refused passage through their limits. At the western terminus the town of Hamburg was built and nourished by the trade that Augusta repelled, while what Charleston lost by a half century of obstruction between Line Street and the wharves is beyond computation. Augusta absorbed Hamburg when the railroad crossed Savannah River, but

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Charleston can never absorb Savannah, Wilmington and Norfolk, all of which ports have been largely built up by the trade which was repelled by Charleston from what was really an insignificant but tremendously effective barrier.

The conditions that brought about the state of affairs described at the close of the last preceding section of this chapter forced the introduction of railroad transportation. The cost of transportation to the port of Charleston was enormous. The planters in the interior found the river service inadequate and were unable to continue business by means of wagons over public highways. As one writer expressed it, with force, in referring to the necessity for Charleston to do something to restore her trade:

"It was patent that a new enterprise, unique and collossal, must be set afoot to attract again the eyes of former patrons. George Stevenson had constructed a successful locomotive engine; its operation on rails had proved economic. The enterprise was new and propitious. Interior agriculture was depressed on account of the cost of transportation. These with many other considerations



THE RAILROAD TRACKS AND LOCOMOTIVES OF TODAY.

determined that Charleston's new enterprise should be a railroad. So that in the year 1827 Alexander Black and his associates applied to the Legislature for a charter, which was granted. The terms of this charter were not satisfactory and the next year, 1828, a charter was secured for the South Carolina Canal and Railroad Company, with the object of building a railroad from Charleston to Hamburg. At this time the total surplus of agricultural products of the State carried to Charleston did not exceed 200,000 bales of cotton at $25 per bale and 100,000 barrels of rough and clean rice at 3 1-8 per pound. This was not a flattering tonnage for a transportation company of such magnitude; but nothing daunted the promoters, and books of subscription were opened at Charleston, Columbia, Camden and Hamburg on March 17, 1828. When the time for subscriptions expired it was found that Charleston had taken 3,500 shares, but Columbia, Camden and Hamburg had not taken one. This cold reception of the company's enterprise did not deter the organization, which took place on May 12, 1828, at the City Hall in Charleston."

The details of the formation of this company and its vicissitudes make interesting reading.

The old South Carolina Railroad was built from Charleston to Hamburg on piling—to use the exact language of a writer in the May number of the "Southern Review" of 1831, "Piles were driven six feet apart in parallel lines

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the heads of these piles are bound together by transverse sleepers; these are surmounted by the longitudinal wooden rail about nine inches square in various lengths from fifteen to thirty-five feet on the top of which, on the inner side, the flat bar-iron is nailed. The tracks are about five feet apart."

The road was completed to Hamburg in October of 1833 at a total cost of $951,148.39 or $6,910 per mile.

Long before 1833 the attitude of the interior had changed from opposition to approval. On this account the line was deflected towards Orangeburg and Columbia.

Concerning the early operations of the Charleston and Hamburg Railroad, the "Charleston Courier" published the following on March 20, 1830: "A sail was set on a car on our railroad yesterday afternoon in the presence of a large concourse of spectators. Fifteen gentlemen got on board and flew off at the rate of 12 to 15 miles an hour. Thirteen persons and three tons of iron were hastily gotten up, and of course were not of the best kind, but owing to this circumstance the experiment afforded high sport.

"The wind blew fresh from about northeast, which, as a sailor would say, was 'abeam' and would drive the car either way with equal speed. When going at the rate of about 12 miles an hour, and loaded with 15 passengers, the mast went by the board with the sail and rigging attached, carrying with them several of the crew. The wreck was descried by several friendly shipmasters who kindly rendered assistance in rigging a jury mast, and the car was again soon put under way. During the afternoon the wind changed, so as to bring it nearly ahead when going in one direction, but this did not stop the sport, as it was ascertained that the car would sail within four points of the wind.

"We understand that it was intended by some of our seamen to rig a car properly, and shortly to exhibit their skill in managing a vessel on land."

C. W. Garris writes: "Another method of propelling the cars was that a kind of treadmill, worked with horses or oxen was at one time in use. But the truth is, the road was designed for a steam railway; for just five days before the ground was broken for a beginning of the road Mr. Bennett, of the board of directors, introduced before his board and had it passed, the following resolution: 'The locomotive shall alone be used. The perfection of this power in its application to railroads is fast maturing, and will certainly reach, within the period of constructing our road, a degree of excellence which will render the application of animal power a gross abuse of the gifts of genius and science.'"

The following quotation from William H. Brown's history of the first locomotive in America, is not only good evidence of South Carolina's claim to the first practical steam railway, but it is a tribute to the foresight of the illustrious citizens who were in charge of the enterprise. He says: "The directors of the South Carolina Railroad, therefore, are not only entitled to the credit of having had built for their railroad, and run upon it, the first locomotive built in the United States, for the practical use of their road, but they are also entitled to the credit of being the pioneers in having their railroad—the first not only in America, but the first in the world—constructed from the very beginning for the use of locomotive power. When the Baltimore and Ohio Railroad was commenced, nearly a year before, from the lack of experience, and under the advice of the best English engineers, the track was designed and constructed for horse power, and not until it had been built as far as Ellicot Mills, a distance of 13 miles, did the subject of locomotives come under deliberation."

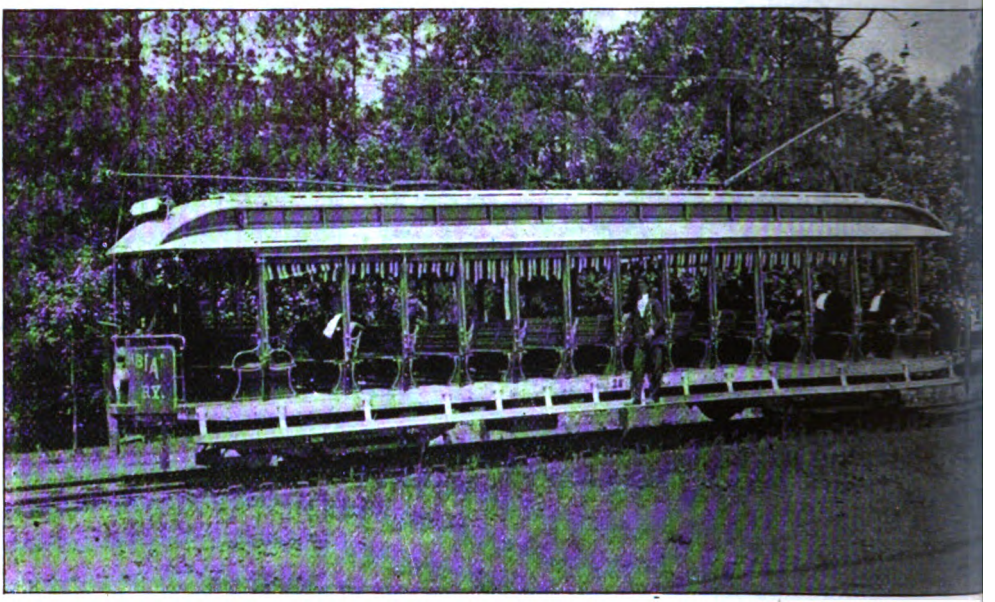
Major Hammond, referring to this first railroad line, says:

"It was the first effort in America to build a railroad expressly for locomotive power, and in England the railroads were short straight lines, built at enormous expense. The Baltimore and Ohio, begun before the Charleston and Hamburg, was intended for horse power, it being then supposed to be impracticable to use locomotives on short curves. Mr. Peter Cooper practically refuted this notion in August, 1830, but some months before his experiment at Baltimore, viz., on the 14th Jan'y, 1830, five days after the commencement of work on the road, the Board of Directors of the Charleston and Hamburg Railroad adopted the report of Mr. Bennett, containing this his memorable sentence: 'The locomotive shall alone be used. The perfection of this power in its application to railroads is fast maturing, and will certainly reach, with the period of constructing our road, a degree of excellence which will render the application of animal power a gross abuse of the gifts of genius and science.' George Stevenson's 'Rocket' made its trial trip at Liverpool, on the 6th of Oct., 1829, so there was barely time for the news of it to have reached Charleston, in January, 1830.

"On the 28th of December, 1829, the contracts were given out, and on the 9th of January, 1830, the railroad was actually begun, by the driving of piles at 'Line's Street.' Mr. E. L. Miller, one of the directors, undertook at his private

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risk, to provide a locomotive that should draw three times her own weight at a speed of 10 miles an hour, and the contract was accepted by the Board of Directors on the 1st of March, 1830. The locomotive was built in New York, under Mr. Miller's direction, and was the first constructed in the United States for actual service on a railroad. It weighed four tons, had four wheels, made with spokes, was called the 'Best Friend,' arrived in Charleston on the 23rd of October, 1830, and made one trip on 2nd November, when the wheels proved of insufficient strength. Others had to be got from New York, and finally on the 14th and 15th December, 1830, trial trips were made when the 'Best Friend' ac-



TYPE OF ELECTRIC RAILWAY DOUBLE-TRUCK CARS.

complished from 16 to 21 miles per hour, drawing four or five cars with 40 or 50 passengers. Without the cars the locomotive run 35 miles an hour, to the amazement of the community. This achievement will be considered all the greater when the remember that the roadway was formed by stringers set on posts with only a strap of iron spiked along one edge of the surface of the stringers. In 1830 six miles of road were built. In 1831 the whole line was placed under contract. On the 7th of November, 1832, the road was opened to Branchville, 62 miles; on the 7th of February, 1833, to Midway, 92 miles, and in October, 1833, the whole road was completed, and opened to the public from Line Street, near Charleston, to Hamburg—cost, $951,148.39. The Liverpool and Manchester Railroad, 30 miles long, was begun in June, 1826, and finished 15th September, 1830, at a cost of £820,000, about $4,000,000."

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SETTLERS LEAVING FOR THE COUNTRY.

5

Immigration, Its History and Present Condition

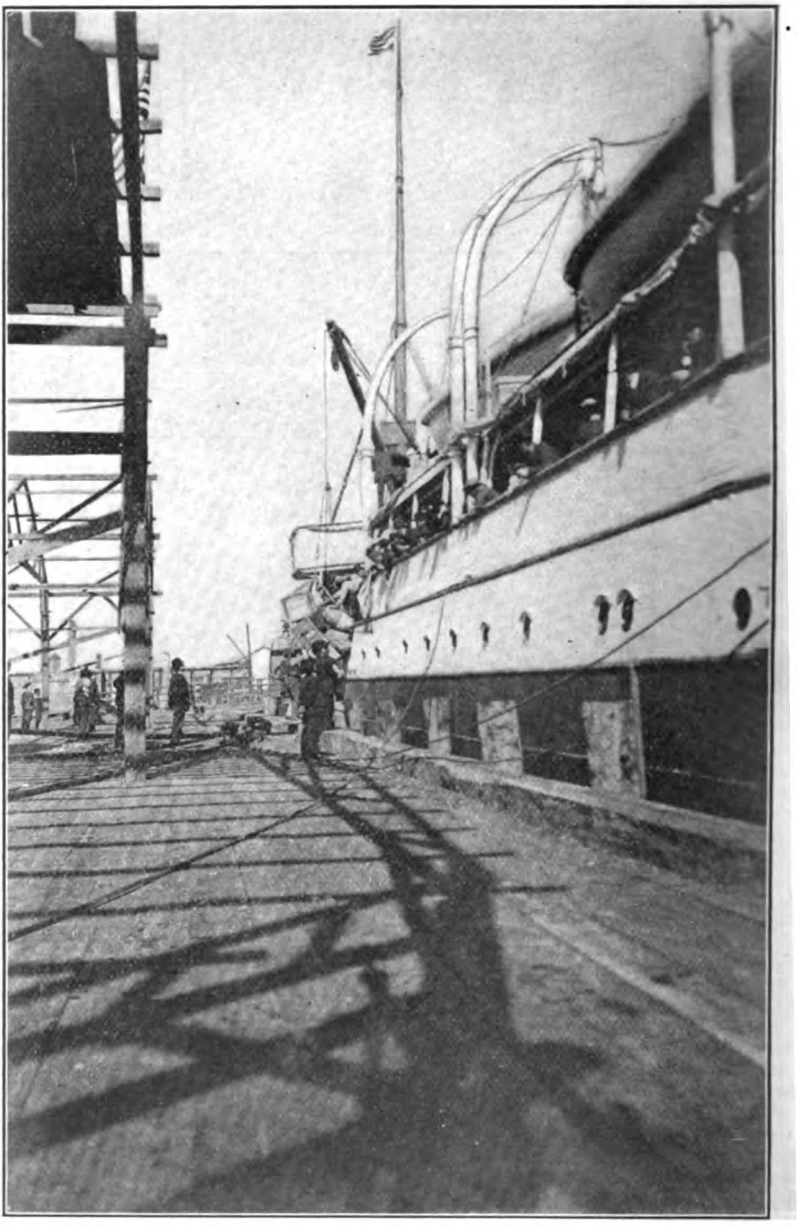
The general subject of immigration is so interwoven with the subjects of trans-Atlantic service, with the analysis of South Carolina's population—its original and later period elements, and with the history of the State itself that it is difficult to treat it concisely. In the first place, the State's entire population until 1750 was native European, and the colony repeatedly made every effort to induce others to come out from all nations. South Carolina is a State made up entirely of immigrants, as has been shown elsewhere, and there is no citizen of the State perhaps today whose parents, grandparents or other ancestors did not hail from some European country. Indeed many of the present day's leading citizens are natives of European countries, despite the small proportion of immigration this State has been receiving since the real coming of immigrants to this country began in earnest in 1820, up to which time it had aggregated about a quarter of a million, and since which time it has added 25,318,067 persons to the population of the United States. The great waves were just prior to the Civil War, again in 1873, again in 1882, and 1907 has far exceeded all records. The first great wave was due to the migration of British and German people, and so was the second, and the third was of the same class. The last heavy record is made by the migration chiefly of Russians and Italians, though the British, Scandinavian and German movements are not so much less than heretofore.



A FAMILY OF BELGIANS.

South Carolina has for many years not been receiving any portion worthy of mention of the classes of people who builded the State and her institutions and since the Western and Northwestern States, the largest number coming in any one year for 14 years up to 1905 being 241 persons in 1892. In 1894 there were 83 and in 1904 only 95, which was an increase over the preceding year. By 1907, according to the report of the United States Commissioner of Immigration, as a result of efforts on the part of the State, this annual number of foreign arrivals had been increased to practically 1,000 souls. And this despite the fact that principally the State's efforts had been during the three years along the line of securing settlers from other portions of this country.

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LANDING IMMIGRANT BAGGAGE FROM THE "WITTEKIND" AT CHARLESTON.

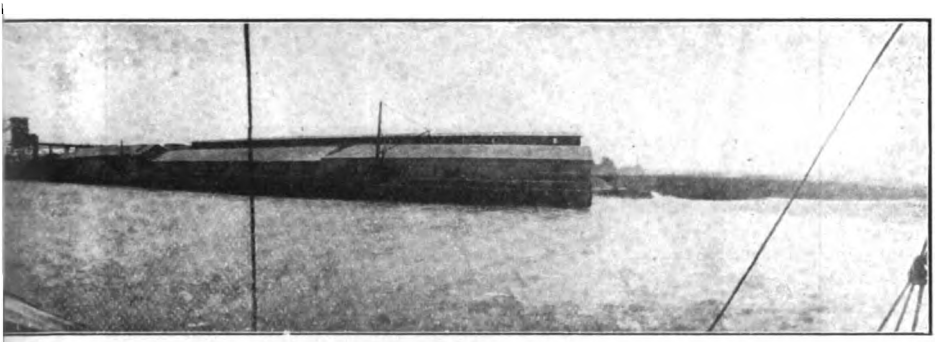
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Meanwhile, as stated in the opening chapter of this volume, this State has furnished to other States a large percentage of their present most desirable population. By 1860 the balance of emigration over immigration was 178,957, white persons—people emigrating to other States; in 1870 the balance was 208,770, of which 128,809 were white; in 1880 it was nearly 200,000; in 1890 it was 167,406, and in 1900 it had risen again to 172,548. The sketches of the history of agricultural and commercial conditions prior to the Civil War and since afford some explanation for this condition, which was one that necessarily led the State to take some steps in 1904 to remedy the evil which by that time was making itself obvious. Today native South Carolinians who have gone to other States are returning here and many in distant centres are aiding the Department of Agriculture, Commerce and Immigration in inducing other desirable settlers to come here.

South Carolina's Invitations.—The State during all of its early history made vigorous efforts to increase the white population. The State first offered a premium for immigration in 1670, when land was offered at a rent of half penny per acre for five years.

In 1712 the Assembly offered 14 pounds to the importer of each healthy male British servant between the ages of 12 and 30 years, "not a criminal."

In 1730 to each man, woman and child who would come over and occupy and plant the land, 50 acres, free of rent, was offered for ten years.



THE SITE OF THE FEDERAL IMMIGRATION STATION AT CHARLESTON.

In 1731 the Government offered 400 pounds for every 100 effective men brought from Switzerland. Forty thousand acres were given the colonists at Purysburg, on Savannah River.

In 1739 a bounty of 6,000 pounds was offered to the first 200 immigrants above 12 years of age, from Wales; provisions and farming stock was also added.

In 1764 King George gave 300 pounds, tents, arms, and vessels and the colony 500 pounds and lands to a party of German immigrants who settled in Londonderry, Edgefield County.

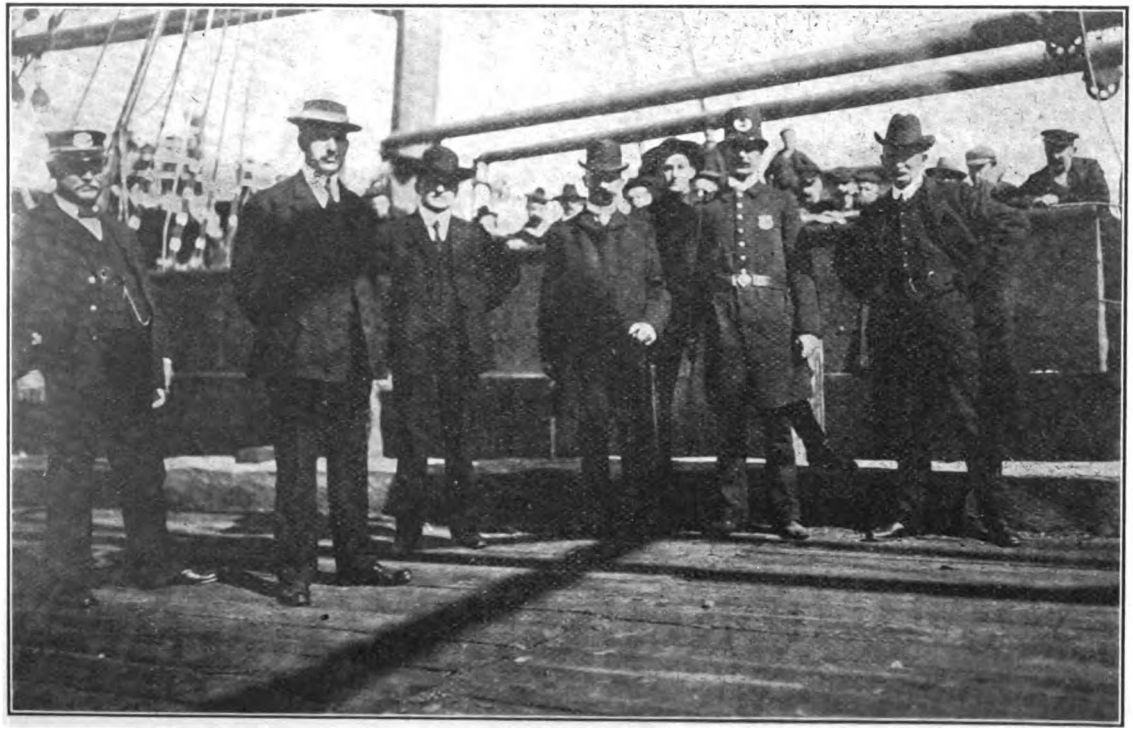
In 1804 there was a general invitation in Charleston to immigrant merchants to come to that city no matter from what nation.

In 1866 the next effort seems to have been made under the direction of Gen. John A. Wagener, appointed Commissioner of Immigration, under the Legislative act of that year. Promising efforts were destroyed by the coming of Reconstruction.

In 1886 the last effort prior to 1904 was made by the then existing Department of Agriculture of the State.

The State's Immigrant Agent of 1732.—In the ship registry for Charles Town for the months of November and December, 1732, on several occasions ships are reported as having brought in Palatines or Switzers. These were emigrants to South Carolina from the Palatinate or Switzerland, brought at the instance of Jean Pierre Purry, whom the Lord's Proprietors of Carolina had entered into contract with, early in the eighteenth century, to bring emigrants to South Carolina. After South Carolina became a Royal Province the British Government assumed the obligations to Purry, and he proceeded with his work of bringing settlers. He prepared and published a pamphlet, which extolled the virtues of

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THE FIRST IMMIGRANT TO LAND FROM THE "WITTEKIND" (IN CENTER OF PICTURE).

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the soil, air, climate, and other natural advantages of South Carolina and the people of the Province. A reprint of this pamphlet may be seen in Carroll's "Historical Collections of South Carolina," Vol. 2, Pp. 121-140. These pamphlets were distributed by Purry throughout Europe and so well did he work his territory that he induced many emigrants to come to South Carolina, but the bulk of his settlers were drawn from Switzerland and the Palatinate. The Switzers were the very best sort of emigrants. They had been independent property holders, farmers, tradesmen and shopkeepers in Switzerland and upon arriving in South Carolina were ready to take up or purchase lands and go to work. Purry brought over two particularly large bodies of French cantons and another in 1735 from the German cantons. The former settled the village and township of Purrysburgh, on the Savannah River, and the latter settled in the village and township of Orangeburgh, on the Edisto River, and from these two bodies of settlers many of our best and most substantial citizens have descended.

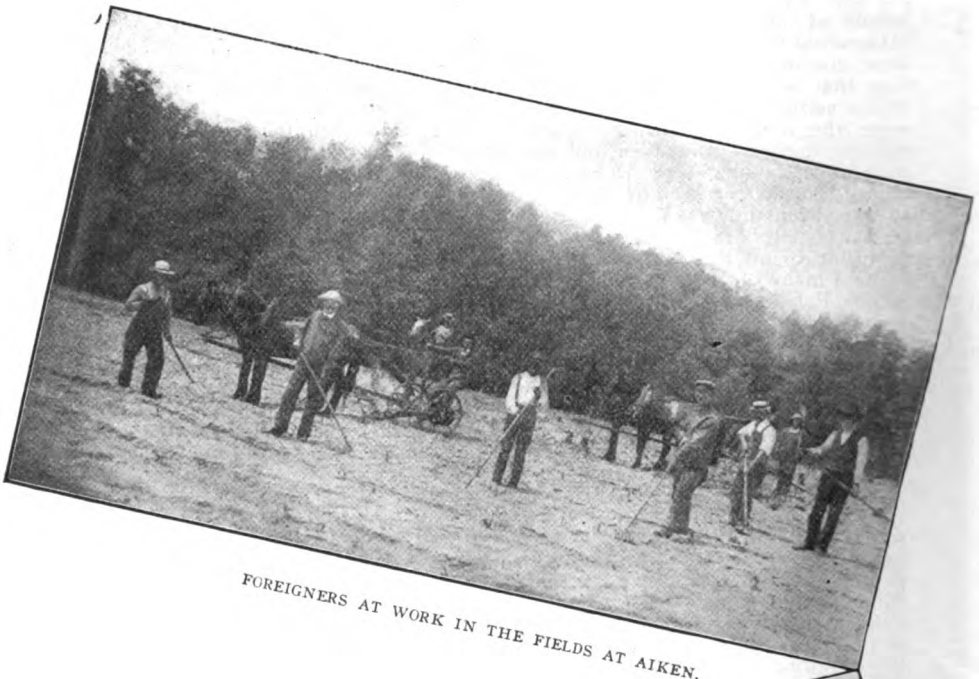
The Palatines were altogether a different class of settlers. They were very poor peasants that had been ground down by centuries of toil and political and religious oppression. Their spirits had been broken and their very intellects dwarfed. They wanted to enjoy the blessings of American freedom, but they were too poor to pay their passage money, but Purry brought them anyway, and they were sold into temporary servitude for their passage money. After their times had been served out they either took up lands, plied their trades, or went elsewhere, but many of these, too, became substantial citizens and doubtless have influential descendants today.

After the Civil War.—Just after the Civil War, at the session of the General Assembly in the latter part of 1866, when James L. Orr was Governor, an act was passed "For the encouragement and protection of European immigration, and for the appointment of a commissioner and agents and for other purposes therein expressed." The act looked largely to the handling of lands offered for sale, the commissioner supervising all such transactions between immigrants and landholders, though it required a systematic advertising campaign abroad. Gen. John A. Wagener was made commissioner and the office was located in Charleston. In the spring of the following year the commissioner issued a 48-page pamphlet, entitled, "South Carolina a Home for the Industrious Immigrant," and its contents as well as the act of the General Assembly was approved at a public meeting in Charleston attended by business men of the city of foreign birth. Such men as Jas. C. Aiken of Winnsboro donated 500 acres of land, to be given immigrants settling upon it. Lewis M. Ayer wrote the commissioner: "In former years very many German farmers settled in Barnwell and the adjoining districts; their descendants now constitute, in all probability, fully half the population of this section of the country." He concluded with an offer to give away 2,000 acres of his lands in sections of 50 acres each to heads of families who would put $500 worth of improvements thereon. Though this undertaking did bring good results, and promised to accomplish much, its career was cut short and abruptly terminated by the horrors of Reconstruction, and the advent of conditions that, even had the State been able to have continued the work, would have made any effort fruitless.

The 1886 Effort.—In the resume of the operations of the Department of Agriculture of South Carolina, published in 1886, is contained the following, which relates to the last effort at immigration to South Carolina prior to the effort of 1904, as published in the "review of operations of the Department of Agriculture of South Carolina for the six years from its establishment to the end of the fiscal year 1885."

"In 1881, to meet a demand which had arisen in the State for agricultural laborers, a Bureau of Immigration was establshed, and was placed under the charge of Dr. E. M. Boykin. The bureau was thoroughly equipped for its work. Arrangements were made with the authorities in New York for the shipment of immigrants, low rates were obtained from both foreign and domestic lines of transportation, pamphlets were distributed abroad, a home for the reception of the immigrants was establshed at Columbia in charge of a superintendent, who also served as interpreter; and immigrants were supplied to all parties making application for them. There were brought into the State about eight hundred persons, mostly of the peasant class, in families, with a few single men. Many of these, particularly where families were engaged, gave great satisfaction; while others, particularly the single men, were found to be very unreliable and fond of shifting their quarters. The bureau was in operation for about two years, when the demand for laborers of this class having ceased, either from a belief having arisen in their unreliability, or from the inability of our people to adapt themselves to the relations required by this new and unaccustomed class of laborers, or both, the office of superintendent was abolished by the General

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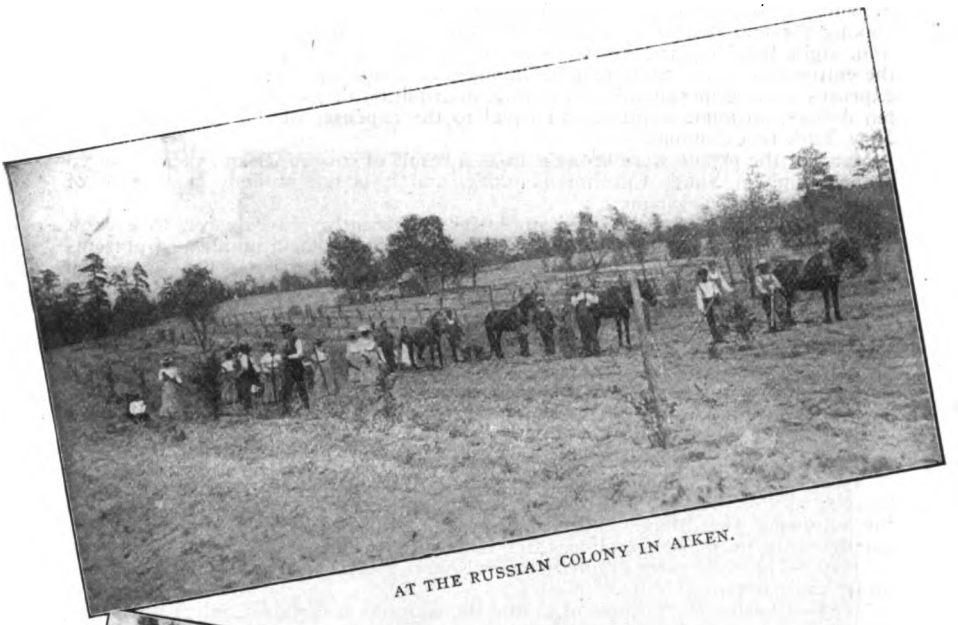


FOREIGNERS AT WORK IN THE FIELDS AT AIKEN.

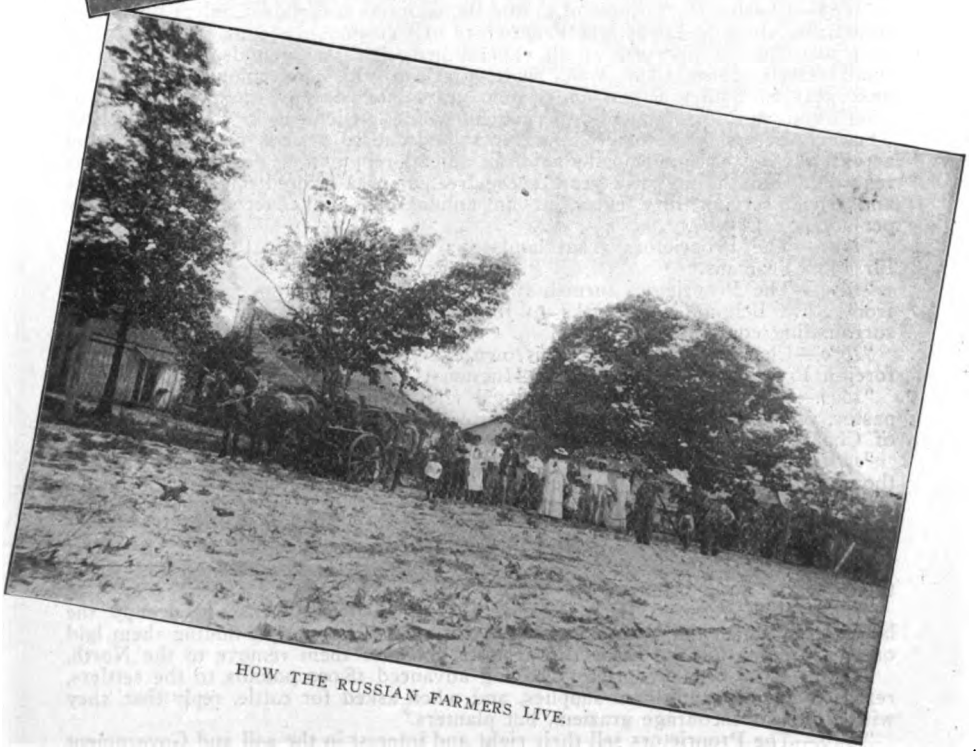


SCENE AT THE AIKEN COLONY.

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AT THE RUSSIAN COLONY IN AIKEN.



HOW THE RUSSIAN FARMERS LIVE.

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Assembly, and the active operations soon after brought to a close. The entire disbursements by the Department for the Bureau of Immigration were $10,770.31, of which amount $1,875.18 were refunded (by parties applying for immigrants), making the real cost of the bureau $8,895.13. As during the period of its operation, eight hundred and sixty (860) immigrants were brought into the State, the entire cost to the State of each immigrant, including the salary and traveling expenses of the superintendent, printing, distribution of pamphlets, &c., was about ten dollars, an amount just about equal to the expenses of the immigrant from New York to Columbia."

Many of the people were brought in as a result of this effort and their children are well-known South Carolinians today, and it is not unlikely that some of them will read this chapter.

Col. B. F. Crayton, who died in Anderson recently, was always an earnest advocate of immigration and it was due to his efforts that a number of present-day well-known Anderson families found their way into that part of South Carolina, and attained a degree of prosperity for themselves and their children that they could never have found in their original homes.

Results of Early Efforts.—Chronologically, Major Hammond summarizes the results of the early efforts at immigration to this State as follows:

"*1497.*—Europeans derived their first knowledge of South Carolina from Sebastian Cabot, an English subject, who visited these coasts shortly after the discovery of the new world.

"*1520.*—D'Ayllon, in quest of gold and slaves, landed on St. Helena Island, gave it its name, and claimed the country for Spain.

"*1562.*—Admiral Coligny sends a colony of French Huguenots, in two small vessels, to Port Royal; a settlement of twenty-six persons is made there, but the following year they build a vessel and return to France, leaving to the country only its name Caroline, after their king, Charles IX, and a small fort.

"*1629.*—The country is granted to Sir Robert Heath by Charles I of England, under the name of Carolina.

"*1663.*—Charles II of England grants the country to certain English noblemen, styled the Absolute Lords and Proprietors of Carolina.

"*1670.*—The Proprietors, at an expenditure of 12,000 pounds, sent out two small vessels, under Capt. Wm. Sayle, to Beaufort. This colony removes the next year to Ashley River, and a few years later occupy the present site of Charleston and form the first permanent white settlement in South Carolina. The Proprietors offer to all immigrants lands at 20 pounds per one thousand acres; where cash could not be paid, an annual rent of one penny per acre was required. For the first five years every freeman was offered one hundred acres and every servant fifty acres, at an annual rent not exceeding half-penny per acre.

"*1671.*—The Proprietors grant land to a colony from the Barbadoes, under Sir John Yeamans.

"*1674.*—The Proprietors furnish two small vessels to remove a Dutch colony from Nova Belgia (New York) to John's Island, whence they spread into the surrounding country.

"*1679.*—Charles II provides at his own expense two small vessels to transport foreign Protestants, chiefly French Huguenots, to Charleston.

"*1696.*—Members of a Congregational church, with Mr. Joseph Lord, their pastor, remove in a body from Dorchester, Massachusetts, to the neighborhood of Charleston.

"*1701.*—According to Dr. Hewitt, the population of South Carolina is seven thousand. It consists of a medley from many countries, and of different faiths. There are Cavaliers and Puritans from England, Dissenters from Scotland, Dutchmen from New York, French Huguenots and Africans.

"*1712.*—The Assembly of South Carolina offer 14 pounds to the 'owners and importers' of each healthy male British servant, between the ages of twelve and thirty years, 'not a criminal.'

"*1715.*—Five hundred Irish immigrate at their own expense to occupy the lands from which the Yemassee Indians have been driven, but finding them laid out in baronies for the Lords Proprietors, most of them remove to the North.

"*1718.*—The Lords Proprietors having advanced 18,000 pounds to the settlers, refuse to furnish additional supplies, and when asked for cattle, reply that 'they wished not to encourage graziers, but planters.'

"*1719.*—The Proprietors sell their right and interest in the soil and Government of Carolina to the king for 17,500 pounds, and an additional 5,000 pounds for the quit rents, overdue by the colonists.

"*1724.*—According to Dr. Hewitt, the population is thirty-two thousand.

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TYPE OF ENGLISH SETTLERS.

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"*1730.*—The Colonial Government marks out eleven townships of twenty thousand acres each, and offer fifty acres, rent free, for ten years, to every man, woman and child who would come over to occupy them. After that period a rental of four shillings per one hundred acres was to be paid annually.

"*1731.*—The Government offers Peter Pury 400 pounds for every one hundred effective men brought over from Switzerland. Three hundred and seventy arrive and are granted forty thousand acres on the lower Savannah River, at Purysburg. (Full fare across the ocean at this time is five pounds for immigrants.)

"*1733.*—The Scotch-Irish descendants of the Scotch Covenanters, from Downe County, Ireland, settle in Williamsburg County, named after King William III.

"*1735.*—A colony of Germans settled in Orangeburg County, which is named after the Prince of Orange.

"*1736.*—The Assembly grants a large tract of land on the Pee Dee to Welsh settlers from Pennsylvania.

"*1739.*—The Council appropriate 6,000 pounds as a bounty to the first 200 immigrants (above twelve years of age, two under to count as one over that age) from Wales, settling upon the Welsh tract on the Pee Dee. They offered, in addition to each head above twelve years, twelve bushels of corn, one barrel of beef, fifty pounds pork, one hundred pounds rice, one bushel salt, and to each male one axe, one broad hoe, one cow and calf and one young sow.

"*1746.*—After the battle of Culloden many of the Scotch rebels were removed to South Carolina.

"*1750.*—Saxe Gotha Township (Lexington County) was laid off and occupied by settlers from Saxe Gotha, Germany. In the same year a colony of Quakers from Ireland settle Camden (Kershaw County).

"*1755.*—Governor Glenn opens the upper county for settlement by a treaty he makes with the Cherokee Indians, obtaining from them the cession of a large tract of territory, and by erecting in the Northwest (Pickens County) Fort Prince George.

"*1760.*—After Braddock's defeat, numbers of Pennsylvanians and Virginians, feeling insecure on account of the Indians, move overland to the upper country of South Carolina.

"*1764.*—King George furnishes 300 pounds, tents, one hundred and fifty stand of arms and two small vessels, to a colony of Germans, who receive, on reaching Charleston, 500 pounds from the Assembly, and are assigned lands in Londonderry Township (Edgefield County).

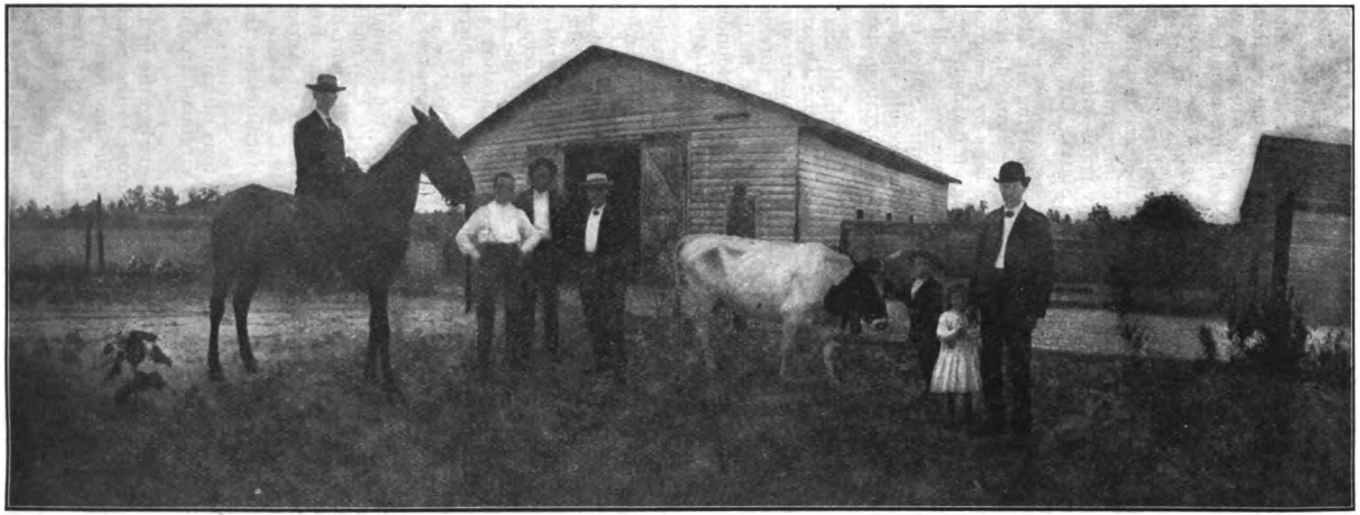
"*1764.*—Two hundred and twelve French Protestants reach Charleston, and are furnished transportation to Long Cane, Abbeville County, where they settle New Bordeaux Township.

"*1765.*—Population, according to Hewitt: white, 38,000; colored, 85,000; total, 123,000.

"*1783.*—The War of Independence being achieved, 'multitudes from Europe and the Eastern and Middle States of America moved into South Carolina."

The Effort of 1904.—It was in 1903 when the cry for labor was rising from every fence corner and spindles in the cotton manufacturing plants were standing idle for want of people to operate them that the General Assembly, upon the earnest recommendation of that distinguished and progressive Chief Executive, Gov. Duncan Clinch Heyward, in its wisdom in 1904 created a Department of the State Government, charged with the inducing of desirable settlers, the obtaining of the much-needed labor, in addition to many other functions. Very properly this department was also charged with all matters relating to agriculture and to the commerce of the State. The demand of the hour was in the immigration branch of the work and the department vigorously went at the almost impossible task of trying to get people to come to a section systematically maligned at the homes of the desired people, a section unknown and unadvertised, even unmentioned except in a derogatory way in immigration circles, both at home and abroad. South Carolina's annual share of the immigrants arriving in this country at that time was about 73. The whole foreign born population of the State did not exceed 5,528 persons. Notwithstanding such a handicap the department began a systematic campaign, and from March 15, 1904 to the end of the year brought into the State 109 Scotch people, and 47 other foreigners, some of whom are substantial and representative citizens today, inducing also quite a number of persons from other portions of the United States to come here. Slowly, necessarily by a painful process, the work was prosecuted, vigorous campaigns of education in the United States and abroad being inaugurated and pursued with never-ending energy, with the result that the advantages of the State were beginning to be known, and during 1906 1,316 foreign born persons were brought to South Carolina.

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IN THE BARNYARD AT THE AIKEN COLONY.

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This State was from the vigor of its methods being characterized as a pioneer in a new movement in the South for the upbuilding of the section industrially, when the crying need of the cotton manufacturers for labor to turn idle spindles came in the summer of 1906.

The Selective Policy.—The State Department had already sounded the note of warning against the indiscriminate immigration pouring into New York and had urged as a national measure the policy of selecting the immigrant at his own home by agents of the State for the purpose for which he was needed in this country. Under the State law the need of the manufacturers offered the means to put this doctrine into practical effect. Subscriptions were accepted to meet the expenses of an extensive experiment, having as its purposes to supply in part the labor needed, to test the practicability of the "selective" policy, to advertise the State's resources and aggressiveness, to test the Federal laws as to the rights of States to induce such selected immigrants, and above all to use the necessity of the hour to open permanently trans-Atlantic service and reëstablish the commerce to the South-Atlantic States. Of course, these manifold objects could not all be attained ideally.

Charleston Made a Federal Station.—The supplying of labor needs was partial; the advertisement of the State can not be estimated; the effort to test the Federal laws led to a remodeling of existing laws by Congress; the wisdom of the "selective" policy was demonstrated, though it had not been ideally executed; and it looks as this is written as if the ultimate result will be the making of Charleston the port of entry for the South-Atlantic States from the standpoint of commerce as well as immigration, another result of the effort being the provision by Congress for the erection of an immigration station at the port of Charleston.

Throughout this somewhat bold experiment, though all acts were in strict accord with the construction of the Federal laws by the Department of State at Washington, there have been accompanying investigations of almost every description by the United States authorities, and even foreign authorities, all, however, having only a happy result. Much was risked in this experiment, but the permanent results—the results in future years from "foundations" of satisfied people—promised so much that it was made regardless of political or any other effect, but for the ultimate good of the Commonwealth.

Practical Results.—There have been, in all, during the period since March 15, 1903, and up to January 1, 1908—less than four years by several months—brought into South Carolina about 2,500 persons from the East, the Northwest, and abroad, some individuals, of whom each have invested as much in South Carolina as the operations of the department has cost the State, including salaries. Often transactions involving several thousands of dollars are made through the department with no cost to either party thereto.

It is not deemed necessary to give here the details of the far-reaching results of the tests of Federal laws made by the South Carolina authorities, though these records may be of value. However, in order that misrepresentation may not intervene a summary of the matter is given below.

Arrival of the "Wittekind."—"The Charleston Year Book of 1906," in an article by Thos. R. Waring says:

"On the morning of Sunday, November 4, 1906, the steamship 'Wittekind' of the North German Lloyd Steamship Company, Capt. C. Von Bardeleben, out of Bremen Thursday afternoon, October 18, came into the port of Charleston with 26 cabin passengers and 450 in the steerage, immigrants from Europe under the personal guidance of E. J. Watson, Commissioner of Agriculture, Commerce and Immigration of the State of South Carolina, by whose efforts in Europe they had been attracted to South Carolina and facilities for their direct passage to this State supplied.

"The vessel brought a freight cargo of 4,000 tons of kainit and other fertilizer material, valued at $56,000 consigned to the Virginia-Carolina Chemical Company.

"The arrival of the 'Wittekind' at Charleston marked the first successful undertaking to promote direct immigration from Europe to the South Atlantic section of the United States in half a century, and was the immediate result of the effort of South Carolina to supply, through State agency, the pressing necessities of a white industrial population to develop its resources and increase its productiveness. Commissioner Watson had been laboring for two years to attract settlers to South Carolina to supply the demand for labor in the fields and in the factories, meeting with only indifferent success in his solicitations in other sections of the United States, and through the channels of immigration at the Northern ports of entry, and, after a careful study of all the conditions, he had determined to seek the establishment of a line of ships plying directly between a European port

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and Charleston to bring immigrants to the State. To this end he was especially moved by the solicitations of the cotton manufacturing interests of the State, whose mills were hampered seriously in their operations by a scarcity of labor.

"The conditions in South Carolina prevailed generally throughout the South and the necessity for supplementing the population with desirable aliens had appeared to the people of the whole section, but South Carolina was the first of the States to carry the idea into action. The availability of Charleston as a port of entry for immigrants was a large factor in the determination to make the experiment and in its successful undertaking.

"In earlier days there had been a considerable flow of immigration through Charleston. The last movement of consequence, previous to that directed by Commissioner Watson, had extended over a period of ten years preceding the Civil War, and brought to Charleston many now prominent in the community."

The details as to how and why the effort was made to induce the North German Lloyd to send this experimental trip to Charleston are fully recorded by Mr. Waring. He tells how the United States Commissioners of Immigration and of Labor both attended the inspection of the passengers; how the new arrivals were given a cordial welcome; how the examination of the passengers was conducted and their distribution to interior points was begun; how only four passengers were finally rejected, and says:

"The 450 steerage passengers were classified as follows: Adults, 379; children, 60; infants, 11. By nationality they were: Belgians, 137; Hollanders, 11; Austrians, 302. The latter included about 160 from Galicia.

"Commissioner Watson reported that the immigrants on the 'Wittekind,' including the cabin passengers, brought with them in money a total of $20,458.49.

"The first passenger from the 'Wittekind' to land on South Carolina soil was Herr Nicolaus Niemann. He was followed by a steady stream of those who had passed the inspectors' examination, until all but the few detained for further observation had come ashore. * * *

"It was generally agreed by those informed upon such matters, that the 'Wittekind's' passengers constituted a most acceptable class of immigrants. Commissioner General Sargent gave his opinion of them in the following language: 'I regard the immigrants into South Carolina this time of a good class and feel that they will make good people for South Carolina.' Commissioner of Labor Neill said: 'They are an unusually fine lot of men and women. They are people of unusual intelligence and are altogether far above the average of those coming to this country.' Col. J. H. Estill of Savannah, who headed the delegation from Georgia, coming to observe the landing of the immigrants, said: 'They might well be called a select crowd, for a better looking lot of men, women and children it would be hard to pick out anywhere.'

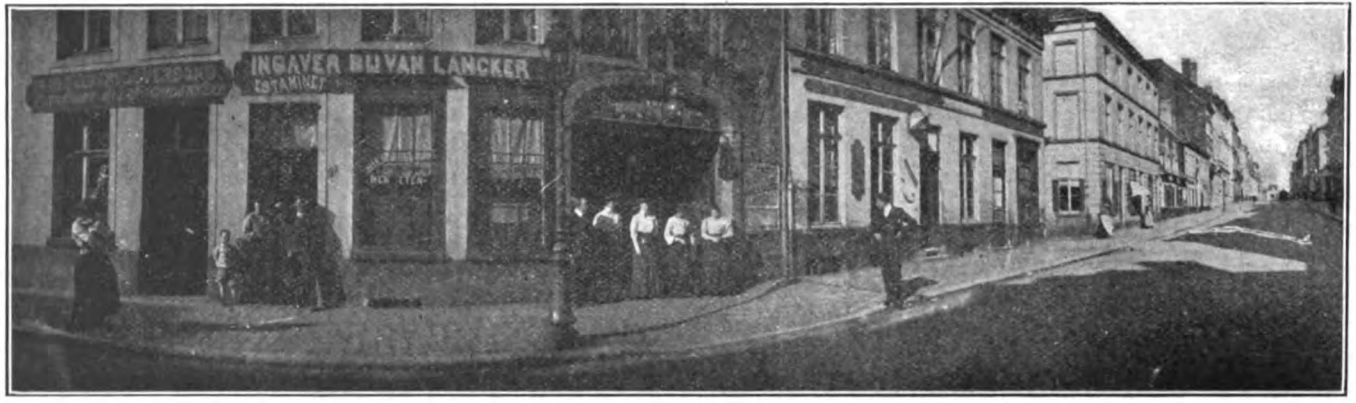
"On the day following the arrival of the 'Wittekind' the inspectors completed their examinations of the few immigrants who had been detained for further consideration, finally passing all but four of the entire lot brought over by Commissioner Watson. At this time, also, a question was raised of far-reaching consequence to the whole movement to bring immigrants to the South, resulting later in a decision by the Department of Commerce and Labor establishing the legality of the methods employed by Commissioner Watson. By the afternoon of the second day all questions relative to the arrival of the immigrants and their disposition had been settled and the special inspectors who had come to Charleston had returned to their regular posts.

"The 'Wittekind' sailed from Charleston on her return voyage to Bremen on Saturday, November 24, at 2:30 o'clock in the afternoon. She had a cargo of 10,349 bales of cotton." * * *

The State authorities naturally encountered many difficulties incident to the distribution and assimilation of the newcomers, due to varied causes, but notwithstanding the general tendency of newly arrived immigrants to move from place to place there were not more than the customary losses from this cause, and in a short time, after the elimination of several malcontents by the State, the best of the people settled down, and are today active agencies in the bringing of relatives and friends, often more desirable than themselvs, to join them. The first instance of this resulted in four months' time, when one party of 59 such people arrived from abroad.

Some who left the State voluntarily returned, and others wrote asking if they could get their places back upon returning. There was one instance of a man who left and prospected from Cuba to Canada, finally returning and resuming farming operations on the coast. During the process of assimilation at the request of the State authorities the United States Bureau of Labor kept a special agent in close observation.

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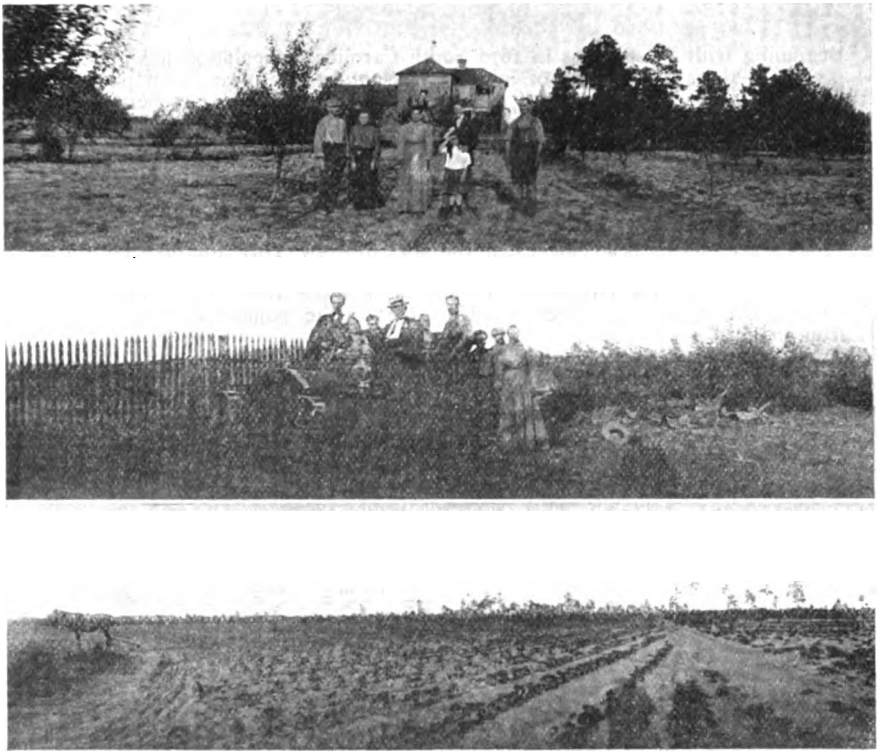


SOUTH CAROLINA DEPARTMENT'S BRANCH OFFICE IN GHENT, BELGIUM.

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As showing the interest of Federal officials safe-guarding American labor, the references to the inauguration of this class of work in South Carolina contained in the annual reports of 1907 of Oscar Straus, Secretary of Commerce and Labor of the United States, and of United States Commissioner General of Immigration Frank P. Sargent are of value.

While these extensive efforts in behalf of securing a high-class immigration have been pushed vigorously, and there is every prospect of securing mere substantial results from the Continent, Scandinavia and Great Britain, from the latter of which sturdy English farm families are at this time arriving, an active,



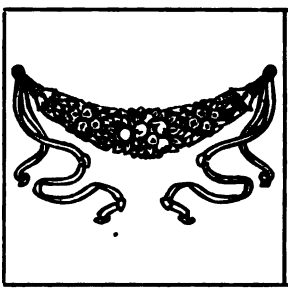
U. S. COMMISSION VISITING BELGIAN SETTLERS—1908.

earnest campaign in the press and in the field has been continually conducted in the farming districts of the East and the Northwest, and the fall of 1907 witnessed the beginning of the results so zealously sought.

It suffices to say that the stage has been reached when almost every week satisfied foreigners are sending back to their native country tickets for their relatives, whom they wish to join them.

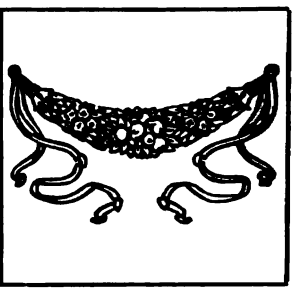
In South Carolina a substantial "foundation" has been laid, which should in the next decade draw to the State a large number of the most desirable foreigners and people of other portions of this country who are seeking to better their condition, and who are anxious to become good citizens of this Commonwealth as so many others of their kind have done during the past two centuries.

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Chapter XIII.

POPULATION



Beginning with 150 persons in 1670 South Carolina's population has grown to 1,474,735 in 1907, but the rate of increase has not by any means kept pace with that in the other settled sections of the United States where prosperity holds sway. The causes it is not necessary to discuss with one who has read the preceding pages. The density per square mile has increased until it is 48.2 persons in 1907, but of the total population there are 848,794 negroes. In 1790 there were 8.2 persons to the square mile. The percentage of increase has not by any means kept pace with the average for all the States of the Union. At present, including negroes, the annual average increase is only about 18,917, less than one day's arrivals of new citizens at the port of New York for distribution in the various portions of the country. South Carolina's rate of increase between 1870 and 1880 was the largest in her history, but the average was made high by the great increase in negroes. Up to 1750 the population was entirely European born.

The whole story of the State's population, treated numerically, and rates of increase is told so completely in the accompanying tables I and II that it is unnecessary to analyze them further. Neither will much more be said as to the negro, for the facts as to how he came here, the period of slavery, and his present status are told clearly and sufficiently in other chapters.

TABLE I.—POPULATION OF SOUTH CAROLINA FROM 1670 TO 1907.

	Total Population.	White.	Colored.	Density per square mile in S. C.	Density per square mile in U. S.	Percentage of U. S. population.	Percentage of increase.	Rank.
1670	150	150	.....	.....	.....	.....	.....	...
1701	7,000	.....	.....	.....	.....	.....	.....	...
1724	32,000	14,000	18,000	.....	.....	.....	.....	...
1734	30,000	8,000	22,000	.....	.....	.....	.....	...
1739	.....	.....	40,000	.....	.....	.....	.....	...
1753	.....	30,000	.....	.....	.....	.....	.....	...
1763	105,000	35,000	70,000	.....	.....	.....	.....	...
1765	123,000	38,000	85,000	.....	.....	.....	.....	...
1790	249,073	140,178	108,805	8.2	16.4	.06	.....	7
1800	345,591	196,255	149,336	11.5	17.4	.06	38.7	6
1810	415,115	214,196	200,919	13.8	17.7	.05	20.1	6
1820	502,741	237,440	265,301	16.7	18.9	.05	21.1	8
1830	581,185	257,863	323,322	19.3	20.3	.04	15.6	9
1840	594,398	259,084	335,314	19.7	21.1	.03	2.2	11
1850	668,507	274,563	393,944	22.2	25.7	.03	12.4	14
1860	703,708	291,300	412,320	23.3	26.3	.02	5.2	18
1870	705,706	289,667	415,814	25.3	30.3	.01.8	0.2	22
1880	995,577	391,105	604,332	32.9	32.	.01.9	41.	21
1890	1,151,149	462,215	688,934	38.2	21.2	.....	14.	23
1900	1,340,316	557,995	782,321	44.4	25.6	.....	13.6	24
1905	1,434,901	606,885	828,016	48.	.....	.....	7.1	...
1907	1,474,735	625,941	848,794	48.2	.....	.....	.....	...

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TABLE II.—PERCENTAGE OF INCREASE OF THE POPULATION OF SOUTH CAROLINA FROM 1790 TO 1880.

Period.	White.	Colored.		Totals.	
		Free.	Slave.	S. C.	States of the Union.
1790 to 1800	40.00	76.84	36.46	38.75	34.66
1800 to 1810	9.14	42.98	34.35	20.12	36.30
1810 to 1820	10.85	49.89	31.62	21.11	33.11
1820 to 1830	8.06	16.04	22.02	15.06	33.53
1830 to 1840	0.47	4.48	3.68	2.27	32.74
1840 to 1850	5.97	8.26	17.71	12.47	35.38
1850 to 1860	6.05	10.64	4.52	5.2	35.57
1860 to 1870	0.55*	0.87		0.2	22.22
1870 to 1880	35.01	45.33		41.0	29.50
1880 to 1890	18.1	14.0		14.	.....
1890 to 1900	20.7	13.6		13.6	.....
1900 to 1905	8.7	5.8		7.1	.....
1905 to 1907	3.1	2.5		2.7	.....

*Decrease.

Table III is particularly interesting, as it shows the drifting of the negro problem to the Eastern, Northern and Middle Western States. It is worthy of special attention that South Carolina is the only State proper in the list that shows for the decade between 1890 and 1900 an actual decrease in the percentage of increase of negro population, as compared to the preceding decade. This movement of South Carolina negroes has been more pronounced during the past five years, the trunk lines of railroads passing through the State and the State's geographical location being the chief agencies in the inducing of negro laborers to migrate. Herein is found also the explanation of the increased demand and opportunities for white settlers and laborers.

TABLE III.—NEGRO POPULATION.

	Total, 1900.	Per cent. Decade Increase, 1880-1890.	Actual Increase, 1890-1900.	Per cent. Decade Increase. 1890-1900.
South Atlantic Seaboard States:				
South Carolina	782,321	14.0	93,387	13.6
Georgia	1,034,813	18.4	175,998	20.5
North Carolina	624,469	5.6	63,451	11.3
Northern, Eastern and Middle Western States:				
Pennsylvania	156,845	25.8	49,249	45.8
New York	99,232	7.7	29,140	41.6
Maryland	235,064	2.6	19,407	9.0
Massachusetts	31,974	18.4	9,830	44.4
Indiana	57,505	15.3	12,290	27.2
Ohio	96,901	9.0	9,788	11.2
Illinois	85,678	23.0	28,050	49.2
West Virginia	43,499	26.3	10,809	33.1
New Jersey	69,844	22.6	22,206	46.6
Connecticut	15,226	6.5	2,924	23.8
Rhode Island	9,092	13.9	1,699	23.0
Other States:				
Texas	620,722	24.1	132,551	27.2
District of Columbia	86,702	26.8	11,130	14.7

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TABLE IV.—MOVEMENT OF THE POPULATION OF SOUTH CAROLINA IN THE UNITED STATES AND FROM OTHER COUNTRIES.

Year.		White.	Colored.	Total.
1860	Persons born in S. C. living in the U. S.	470,257	.....	.....
	Persons born in S. C. living in S. C.	276,868	.....	.....
	Loss by movement within the U. S.	193,389	.....	.....
	Population of S. C.	291,300	412,408	703,708
	Gain by immigration from all quarters	14,432	.....	.....
	Balance of emigration over immigration	178,957	.....	.....
1870	Persons born in S. C. living in the U. S.	418,875	505,899	924,774
	Persons born in S. C. living in S. C.	270,301	408,407	678,708
	Loss by movement within the U. S.	148,574	97,492	246,066
	Population of S. C.	290,067	415,938	706,005
	Gain by immigration from all quarters	19,766	17,531	37,297
	Balance of emigration over immigration	128,809	79,961	208,770
1880	Persons born in S. C. living in the U. S.	500,994	682,817	1,183,311
	Persons born in S. C. living in S. C.	363,576	588,819	952,395
	Loss by movement within the U. S.	137,418	93,498	230,916
	Population of S. C.	391,105	604,472	995,577
	Gain by immigration from all quarters	27,529	15,653	43,182
	Balance of emigration over immigration	109,889	77,845	187,734
1890	Persons born in S. C. living in the U. S.	.....	.....	1,318,555
	Persons born in S. C. living in S. C.	.....	.....	1,112,769
	Loss by movement within the U. S.	.....	.....	205,786
	Population of S. C.	462,215	688,934	1,151,149
	Gain by immigration from all quarters	.....	.....	38,380
	Balance of emigration over immigration	.....	.....	167,406
1900	Persons born in S. C. living in the U. S.	.....	881,495	1,512,864
	Persons born in S. C. living in S. C.	.....	.....	1,279,572
	Loss by movement within the U. S.	.....	.....	233,292
	Population of S. C.	557,995	782,321	1,340,316
	Gain by immigration from all quarters	.....	.....	60,744
	Balance of emigration over immigration	.....	.....	172,548

The median age of the negro in South Carolina is not above 16 years due to the great birth rate and the high death rate.

No attempt shall be made to trace the history of the large emigration of white South Carolinians, which is referred to and in a measure explained in the opening chapters of this volume. That there were opportunities in other sections which were closed in South Carolina at certain periods largely as a result of the vicissitudes of war are amply shown by Table IV herewith, which gives the statement of these losses compactly and sufficiently.

The full statistics as to the population of the several counties, the divisions of population of the State, are given in Table V herewith. This table gives the population from 1790 to date by decades, and is valuable in that it also gives data as to the establishment and creation of each county as it was formed.

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TABLE V.—POPULATION OF SOUTH CAROLINA BY COUNTIES, 1790 TO 1906.

	1906.	1900.	1890.	1880.	1870.	1860.	1850.	1840.	1830.	1820.	1810.	1800.	1790.
The State, Total	1,467,391	1,340,316	1,151,149	995,577	705,606	703,708	668,507	594,398	581,185	502,741	415,115	345,591	249,073
Abbeville[1]	36,106	33,400	46,854	40,815	31,129	32,385	32,318	29,361	28,149	23,167	21,156	13,553	9,197
Aiken	43,358	39,032	31,822	28,112	.....	.....	.....	.....	.....	.....	.....	.....	.....
Anderson[2]	62,940	55,728	43,696	36,612	24,049	22,873	21,475	18,493	17,169	.....	.....	.....	.....
Bamberg[3]	19,366	17,296	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barnwell[3]	39,764	35,504	44,613	39,857	35,724	30,743	26,608	21,471	19,236	14,750	12,280	7,376	.....
Beaufort	36,317	35,495	34,119	30,176	34,350	40,053	38,805	35,794	37,032	32,199	25,889	20,428	18,753
Berkeley[4]	33,190	30,454	55,428	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Calhoun[20]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charleston[5]	104,806	88,006	59,903	102,800	88,863	70,100	72,805	82,661	86,338	80,212	63,179	57,480	46,647
Cherokee[6]	23,921	21,359	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chester	29,786	28,616	26,660	24,153	18,805	18,122	18,038	17,747	17,182	14,189	11,479	8,185	6,866
Chesterfield	21,559	20,401	18,468	16,345	10,584	11,834	10,790	8,574	8,472	6,645	5,564	5,216	.....
Clarendon[7]	31,154	28,184	23,233	19,190	14,038	13,095	.....	.....	.....	.....	.....	.....	.....
Colleton[8]	36,662	33,452	40,293	36,386	25,410	41,916	39,505	25,548	27,256	26,404	26,359	24,903	20,338
Darlington[9]	32,016	32,388	29,134	34,485	26,243	20,361	16,830	14,822	13,728	10,949	9,047	7,631	.....
Dorchester[10]	17,854	16,294	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Edgefield[11]	27,998	25,478	49,259	45,844	42,486	39,887	39,262	32,852	30,509	25,119	23,160	18,130	13,289
Fairfield	29,917	29,425	28,599	27,765	19,888	22,111	21,404	20,165	21,546	17,174	11,857	10,087	7,623
Florence[12]	30,538	28,474	25,027	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Georgetown	24,034	22,846	20,857	19,613	16,161	21,305	20,647	18,274	19,943	17,603	15,679	22,938	22,122
Greenville	58,998	53,490	44,310	37,496	22,262	21,892	20,156	17,839	16,476	14,530	13,133	11,504	6,503
Greenwood[13]	31,145	28,343	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hampton	25,652	23,738	20,544	18,741	.....	.....	.....	.....	.....	.....	.....	.....	.....
Horry	25,824	23,364	19,256	15,574	10,721	7,962	7,646	5,755	5,245	5,025	4,349	.....	.....
Kershaw	24,569	24,696	22,361	21,538	11,754	13,086	14,473	12,281	13,545	12,432	9,867	7,340	.....
Lancaster	26,441	24,311	20,761	16,903	12,087	11,797	10,988	9,907	10,361	8,716	6,318	6,012	6,302

[1]Part taken to form part of Greenwood in 1897.
[2]Organized from part of Pendleton in 1826.
[3]Bamberg organized from part of Barnwell in 1897.
[4]Organized from part of Charleston in 1882, part taken to form part of Dorchester in 1897, and part annexed to Charleston since 1890.
[5]Part taken to form Berkeley in 1882, part of Berkeley annexed since 1890.
[6]Organized from parts of Spartanburg, Union, and York in 1897.
[7]Part taken to form part of Florence in 1888.
[8]Part taken to form part of Dorchester in 1897.
[9]Part taken to form part of Florence in 1888, part annexed to Florence in 1890.
[10]Organized from parts of Berkeley and Colleton in 1897.
[11]Parts taken to form Saluda in 1896, and part of Greenwood in 1897.
[12]Organized from parts of Clarendon, Darlington, Marion, and Williamsburg in 1888; part of Darlington annexed since 1890.
[13]Organized from parts of Abbeville and Edgefield in 1897.
[20]Organized from parts of Orangeburg and Lexington in 1908.

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TABLE V.—POPULATION OF SOUTH CAROLINA BY COUNTIES, 1790 TO 1906.—Con.

	1906.	1900.	1890.	1880.	1870.	1860.	1850.	1840.	1830.	1820.	1810.	1800.	1790.
Laurens	40,844	37,382	31,610	29,444	22,536	23,858	23,407	21,584	20,863	17,682	14,982	12,809	9,337
Lee[19]	25,186	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lexington	30,312	27,264	22,181	18,564	12,988	15,579	12,930	12,111	9,065	8,083	6,641	.....	.....
Marion[14]	38,301	35,181	29,976	34,107	22,160	21,100	17,407	13,932	11,208	10,201	8,884	6,914	.....
Marlboro	30,117	27,639	23,500	20,598	11,814	12,434	10,789	8,408	8,582	6,425	4,966	5,452	10,706
Newberry	32,426*	30,182	26,434	26,497	20,775	20,879	20,143	18,350	17,441	16,104	13,964	12,006	9,342
Oconee	26,598	23,634	18,687	16,256	10,536	.....	.....	.....	.....	.....	.....	.....	.....
Orangeburg	65,825	59,663	49,393	41,395	16,865	24,896	23,582	18,519	18,453	15,653	13,229	15,766	18,513
Pendleton[15]	.....	.....	.....	.....	.....	.....	.....	.....	.....	27,022	22,897	20,052	9,568
Pickens[16]	21,163	19,375	16,389	14,389	10,269	19,639	16,904	14,356	14,473	.....	.....	.....	.....
Richland	50,845	45,589	36,821	28,573	23,025	18,307	20,243	16,397	14,772	12,321	9,027	6,097	3,030
Saluda[17]	21,048	18,966	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Spartanburg[18]	71,662	65,560	55,385	40,409	25,784	26,919	26,400	23,669	21,150	16,989	14,259	12,122	8,800
Sumter	36,090	51,237	43,605	37,037	25,268	23,859	33,220	27,892	28,277	25,360	19,054	13,103	6,940
Union[18]	25,579	25,501	25,363	24,080	19,248	19,635	19,852	18,936	17,906	14,126	10,995	10,237	7,693
Williamsburg[14]	34,025	31,685	27,777	24,110	15,489	15,489	12,447	10,327	9,018	8,716	6,871	.....	.....
York[18]	43,394	41,684	38,831	30,713	24,286	21,502	19,433	18,383	17,790	14,936	10,032	10,250	6,604

[14]Part taken to form part of Florence in 1888.
[15]Taken to form Anderson and Pickens in 1826.
[16]Organized from part of Pendleton in 1826.
[17]Organized from part of Edgefield in 1896.
[18]Part taken to form part of Cherokee in 1897.
[19]Formed from parts of Kershaw, Darlington and Sumter in 1902; area 410¼ square miles.

DIVISIONS OF POPULATION IN 1900 BY COUNTIES.

	White.	Negro.
Abbeville	11,321	22,069
Aiken	17,385	21,640
Anderson	32,229	23,496
Bamberg	5,638	11,658
Barnwell	10,088	25,416
Beaufort	3,349	32,157
Berkeley	6,451	23,973
Calhoun*	.....	.....
Charleston	27,617	60,312
Cherokee	13,942	7,896
Chester	9,243	19,372
Chesterfield	12,226	8,145
Clarendon	8,063	20,151
Colleton	11,157	22,265
Darlington	13,083	19,304
Dorchester	6,202	10,089
Edgefield	7,347	18,131
Fairfield	7,050	22,575
Florence	11,819	16,654
Georgetown	5,336	17,507
Greenville	33,999	19,438
Greenwood	9,457	18,906
Hampton	8,226	15,502
Horry	17,042	6,320
Kershaw	10,002	14,683
Lancaster	12,201	12,110
Laurens	15,205	22,177
Lee*	.....	.....
Lexington	16,961	10,303
Marion	16,902	18,160
Marlboro	11,226	16,413
Newberry	10,831	19,831
Oconee	17,530	6,104
Orangeburg	18,230	41,442
Pickens	14,574	4,901
Richland	17,518	28,070
Saluda	8,819	10,147
Spartanburg	44,391	21,157
Sumter	12,881	38,353
Union	10,948	14,558
Williamsburg	11,818	19,967
York	19,784	21,939
Total	567,807	782,321

*Counties formed since 1900.

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TABLE VI.—POPULATION.

TOTAL BORN IN OTHER STATES (1900)

Alabama	1,092
Arizona	6
Arkansas	162
California	26
Colorado	13
Connecticut	189
Delaware	36
District of Columbia	92
Florida	772
Georgia	13,544
Idaho	2
Illinois	150
Indiana	138
Indian Territory	13
Iowa	55
Kansas	36
Kentucky	325
Louisiana	152
Maine	157
Maryland	394
Massachusetts	283
Michigan	139
Minnesota	16
Mississippi	466
Missouri	110
Montana	4
Nebraska	20
Nevada	1
New Hampshire	45
New Jersey	252
New Mexico	6
New York	1,065
North Carolina	29,541
North Dakota	5
Ohio	282
Oklahoma	3
Oregon	4
Pennsylvania	557
Rhode Island	51
South Dakota	5
Tennessee	932
Texas	271
Utah	3
Vermont	50
Virginia	2,926
Washington	5
West Virginia	88

Table VI shows in detail for 1900 the total number of persons in South Carolina born in other States.

Elements of Population in Early Periods.—Mills' statistics thus deals with the elements of population of the State in the early periods of the State's history.

"It was important to the safety and prosperity of the Province that the population should increase as rapidly as possible. To effect this every inducement to emigration was held out—liberty of conscience was allowed to all by the charter, and it tended greatly to encourage emigration. At this period (1680) commenced a severe religious persecution in England, which contributed essentially to people the new countries. To this circumstance was the Province indebted for the possession of those talents and that inflexible virtue, which distinguished its citizens during those perilous times. When men, to secure the rights of conscience, will exchange the endearments of home and cultivated society for a strange land and a wilderness, we can not doubt the correctness of their principles. Happy was it for Carolina, that such was the character of its earliest settlers.

"In 1671, a small colony from Barbadoes came over, under the auspices of Sir John Yeamens, who had received a large grant of land from the proprietors. (With this colony were introduced the first, and for a considerable time the only slaves in Carolina.)

"(The first settler of the Swiss Nation in South Carolina was Jean Francois de Genillet, who was granted 3,000 acres about 1688, about the same time some 1,200 acres was granted to John d'Arsens, Seigneur de Wernhaut, who was the first Belgian settler.)

"In 1764, the colony received a valuable addition to its strength from the Dutch settlement of Nova Belgia (now New York). They first settled on James Island, where they founded a town, but, finding their situation too contracted, they spread themselves over the country.

"In 1679, two small vessels arrived with several foreign Protestants, who proposed to raise wine, oil, silk and other productions of the South.

"The revocation of the edict of Nantes, in 1685, contributed to send many valuable citizens to the Province; they generally, at first, established themselves on the banks of the Santee River. Besides those who came directly from France, there was a considerable number who emigrated to the Northern Provinces, and who afterwards repaired to this.

"In 1696, the Reverend Joseph Lord, from Dorchester, Massachusetts, with his congregation, arrived in the Province, and settled in a body near the head of navigation of Ashley River.

"In 1712, a premium was offered of 14 pounds currency, by law, for each healthy British servant, not a criminal.

Though no considerable group of settlers are known to have emigrated to South Carolina between 1696 and 1730, the Province continued to advance in

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population, from the arrival of many individuals. Immediately after the royal purchase of the Province in 1729, vigorous measures were adopted for filling the country with inhabitants. Bounties were offered, free lands assigned, and other inducements held out to allure settlers. The doors were thrown open to Protestants of all nations. Besides the distressed subjects of Great Britain, multitudes of the poor and unfortunate of Germany, Switzerland, and Holland closed with the offers and emigrated between the year 1730 and 1750. Orangeburg, Congaree and Wateree received a large proportion of the Germans—Williamsburg was the rendezvous for the Irish—the Swiss took their stand on the banks of the Savannah River. Soon after the suppression of the rebellions of 1715 and 1745, in Scotland, many of the vanquished Highlanders were transported to or voluntarily sought an asylum, in South Carolina. Numbers of Palatines arrived every year; until the King of Prussia put a stop to it, by refusing them a passage through his dominions.

"Until this time the settlements were confined to within eighty miles of the coast. The extinction of Indian claims, by a cession of territory to the King, embracing a vast extent of fine country, including the present districts of Edgefield, Abbeville, Laurens, Newberry, Union, Spartanburg, York, Chester, Fairfield and Richland, opened the way to the settlement of the upper country. For the protection of the inhabitants, a line of forts was built from the mountains down to Savannah River below Augusta.

"The Province of Nova Scotia was first settled by the French, under the name of Acadia. After it fell into the hands of the English, motives of policy some time after induced a very harsh measure in respect to these French to be put into execution, in consequence of which about fifteen hundred of them were sent to Charleston.

"Emigrants from Ireland and Germany continued to come into the Province, and many colonists belonging to Virginia, Maryland and Pennsylvania, obtained grants of land in the interior of this State, and introduced the cultivation of wheat, hemp, flax and tobacco. These settlements were, however, much exposed to Indian depredations, and suffered from this cause until after the treaty of Paris, in 1763, which removed French influence from among the Indians. The cession of Florida, also removed troublesome neighbors, and left the Indians so much in the power of the English as to deter them from future hostilities. After this treaty, the population of the Province rapidly increased.

"In April, 1764, five or six hundred poor Palatines arrived in Charleston, under royal protection, and some settled in a body, in one of the townships laid out in that part of the Province suited to their avocations, which consisted chiefly in the culture of the vine and silk.

"In this year also 212 settlers arrived from France; they were made up of a number of persecuted Protestant families, under the guidance of the Rev. Mr. Gibert, a popular preacher. They were received with great kindness and hospitality, and in the October following were located on the banks of the Long-Cane Creek (now in Abbeville district), which they named Bourdeaux, and New Rochelle (after the capitals of the Province from which most of them emigrated).

"But no country furnished the Province with as many inhabitants as Ireland. Scarcely a ship sailed from any of its ports for Charleston that was not crowded with men, women and children. The bounty allowed new settlers induced numbers of these people to resort to South Carolina.

"When the great conflict for independence commenced, the population of South Carolina amounted to 40,000 souls. During its continuance little addition was made either to its population or improvement. But this was amply compensated by the multitudes from Europe and the more northern parts of America, which poured into the State shortly after the peace of 1783. Pendleton and Greenville Districts, which were obtained by treaty, founded on conquests, from the Cherokee Indians, in 1777, filled so rapidly with inhabitants that in the year 1800, they alone contained upwards of 30,000 souls.

"Hitherto Carolina has been an asylum to those who fled from tyranny and persecution, to the exile, the weary and heavy laden, the wretched and unfortunate, and to those who were bowed down with poverty and oppression. The insecurity of life, liberty and property in revolutionary France, and the indiscriminate massacre of Frenchmen in St. Domingo, drove several hundreds in the last years of the eighteenth century to the shores of Carolina. They were kindly received, and such as were in want received a temporary accommodation, at th expense of the public. Most of them fixed their residence in or near Charleston. This was the last group of settlers the State received from foreign countries."

The above was written in 1826.

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Population Analysis.—South Carolina in 1900 had a total population of 1,340,316, of which the large per cent. of 87.2 or 1,169,060 reside in the country districts. Charleston was at that time the only city credited with more than 25,000, having 55,807. In towns of from four to eight thousand there were 56,941 or 4.2 per cent. Classified by sex the State was very nearly equally divided, there being 664,895 males and 675,421 females, a difference of only .8 per cent. When divided by race the negro predominates with a total of 782,321, the white 557,807, while the Indian numbers only 121, and the Mongolian 67, the white having an increase from the period of 1890 to 1900 of 20.7 to the negro's increase of 13.6 per cent. In 1890 the native born persons in South Carolina were 1,144,879, while in 1900 they increased to 1,334,788, an increase of 16.6, while the foreign born persons in South Carolina in 1890 were 6,270 and in 1900 showed only 5,528, a decrease of 11.8 per cent. Of the State's entire population 99.6 are native born, while the small per cent. of .4 are foreign. Our State has drawn heavily from North Carolina, Georgia, Virginia, New York and Alabama, respectively, for her people born in other States, varying from North Carolina's contribution of 29,000 to Alabama's of 1,092.

In 1900 our foreign population consisted of 2,075 Germans, 1,131 Irish, 180 Italians, 316 Russians, 259 Scotchmen, 84 Frenchmen, and 49 Norwegians, with perhaps 100 others from Mexico, Greece, Poland, Holland, Finland, etc.

Our younger population or those at age to receive schooling are classified into both sex and race, there being a total number of school age of 560,773, consisting of 279,546 males and 281,227 females, of which 218,323 are white, and 342,401 are negro.

The military strength of the State is shown by the militia age reaching a total of 236,767 persons, of which 106,406 are white and 130,283 negro, 24 Indian, and 54 Mongolian. Of voting age in 1900 there were 283,325 persons; white 130,375, negro 152,860, 29 Indian, and 61 Mongolian.

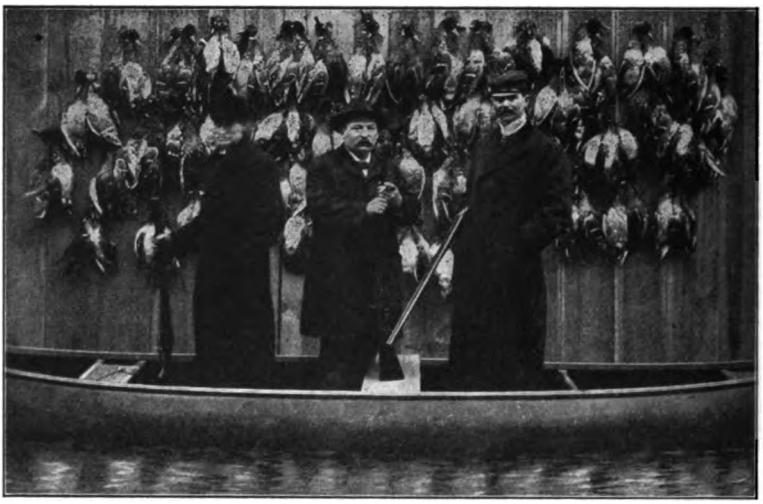
The families classified by tenure of homes shows that there were 269,864 families, of which 77,346 were freeholders, 175,780 rented, and 14,048 homes were under mortgage. The condition of the remainder of families' holdings was unknown.

Our working population of 570,995 is divided into five principal classes, those following agricultural pursuits being the largest, and numbering 393,693; next is the domestic class, 78,795; the manufacturing class or those following mechanical pursuits, 58,731; trade and transportation employes number 29,345, while there are 10,431 professionally engaged. These principal classes are subdivided into male and female divisions, as follows: The agricultural, 278,614 males, 115,079 females; the domestic, 33,732 males and 45,063 females; the manufacturing, 42,669 males, 16,062 females; trade and transportation, 27,794 males, 1,551 females; professionally there are 6,836 males and 3,595 females.

The farming families in South Carolina number 152,993, of which 43,096 own their homes, 11,192 have mortgages, and 93,570 rent their places. Some 4,225 families live at homes, the ownership of which is not procurable.

The working negro of the State numbers 224,561 males and 138,560 females. Of these the large proportion of 173,278 males and 94,048 females follow agricultural pursuits. There are 1,627 males in professional service, of which 1,042 are clergymen, and 1,019 females. Domestic or personal service occupies 27,611 males and 41,037 females; of the latter 12,715 are engaged as laundresses. Under the head of trade and transportation there are 8,238 males and 219 females working. The larger part of those so termed are employed either on railroads or conduct hacks and drays of their own. Manufacturing and general mechanical pursuits employ 13,807 negro males and 2,237 females. Under this class there are 2,695 who are independent carpenters and joiners.

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END OF A DUCK HUNT.

Chapter XIV.

Hunting and Fishing

No State in the Union, perhaps, furnishes a better variety of sport for the hunter and the fisherman than South Carolina. The fact that Grover Cleveland, that peer among huntsmen, while President of the United States, and since that time, has found his best hunting and fishing on the coast of South Carolina, and annually comes to indulge in this sport, is a guarantee that South Carolina hunting and fishing affords a variety of rare attractiveness. The further fact that many wealthy men have bought up land and established hunting preserves with club houses is indicative of the character of the sport to be had.

Georgetown County abounds in game. One of the most famous gun clubs in that section is the Annandale Gun Club, located between Winyah Bay and Santee River. Here some of the most distinguished citizens of the country have hunted, including President Grover Cleveland, Admiral Robley D. Evans, Gen. Alexander, Capt. Lamberton and others too numerous to mention. A membership in this club is worth $15,000, and its membership scarcely exceeds 12 men.

Another famous club is that located on Murphy's Island, about 25 miles from Georgetown, and is called the Santee Gun Club. Its membership is composed largely of Philadelphians, who also pay fancy prices for the privilege of hunting in Georgetown County.

Throughout the State quail abound, and notable hunting sections are in the vicinity of Ridgeway and Ninety-Six.

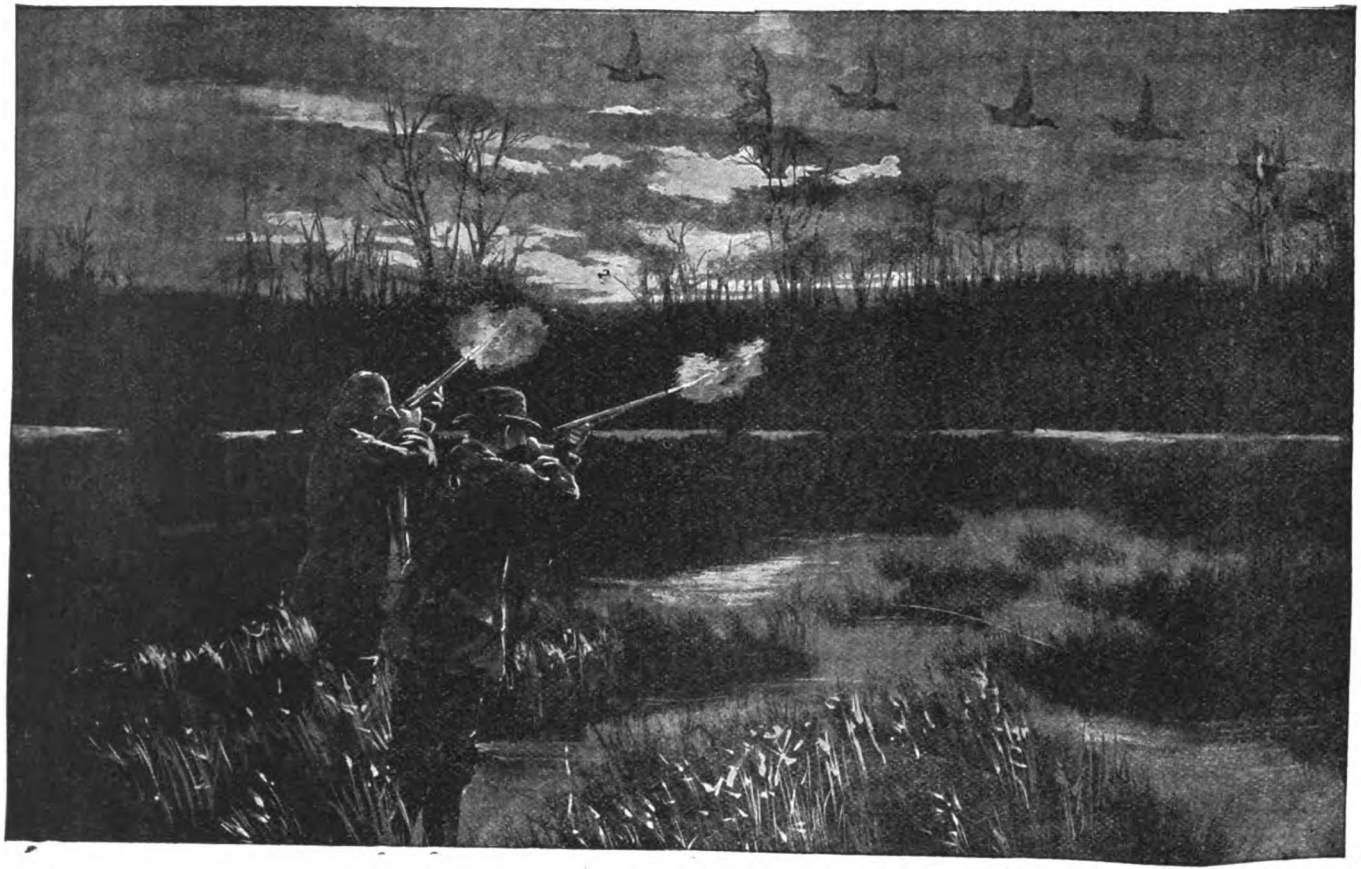
On the coast deer are to be found in abundance, and deer hunting in Hampton, Georgetown and other low-country counties is as good, perhaps, as anywhere in the world.

Wild turkey, bear and wild duck shooting is to be had in abundance. Duck shooting is excellent, not alone on the coast, but along most of the numerous river courses in the State, extending northward above Columbia on the Broad River. Then there is the delicate and delicious rice bird found in the coast counties, particularly Georgetown.

As for fishing, off the coast practically every variety of sea fish is found, save the tarpon, and rare sport is afforded the deep-sea fisherman. Black fish, whiting, sheepshead and such fish are the victims in large quantities of fishing parties that spend pleasant days in sail boats or naphtha launches. Aside from this sea-water fishing for pleasure, there is much fishing for shad for commercial purposes, and thousands of oysters, as will be seen elsewhere, are gathered for consumption and canning. It is a common thing on the coast for negroes to manage to live the entire year at practically no expense as a result of their fishing operations. Shrimp and crab are gathered freely.

In the fresh water streams, lakes and ponds all over the State are to be found in abundance delicious trout, the famed pond bream, jack fish, perch, cat fish, goglies, "mollies," and many other varieties of fish that make glad the heart of the true fisherman. German carp in plenty are also to be caught. The perch and the bream are esteemed the fish de luxe, and far and wide are famed the bream caught in the great lake at Langley, not far from Aiken.

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THE LAST SHOT OF THE DAY.

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From a commercial standpoint, it is impossible to give in figures an adequate idea of the salt and fresh water fish caught and sold on the market annually, as these are sold by individuals who catch the fish and peddle them.

During 1905, however, on the coast something over 2,000,000 bushels of oysters were canned, worth $600,000, and about 62,000 shad were caught and shipped to market. Terrapin were trapped and raised, and about 20,000, so far as known, found their way into the exclusive markets wherein terrapin are esteemed a great delicacy.

The State has, up to a few years ago, given but little attention to its fisheries and to its game, but there has recntly been an awakening along this line, and there are now game and fish wardens watching things with an eye to the future.

Recently the State Audubon Society was formed, and much excellent work is being done looking to the protection of the game birds of the State.



TURKEY HUNTING.

Game Laws.

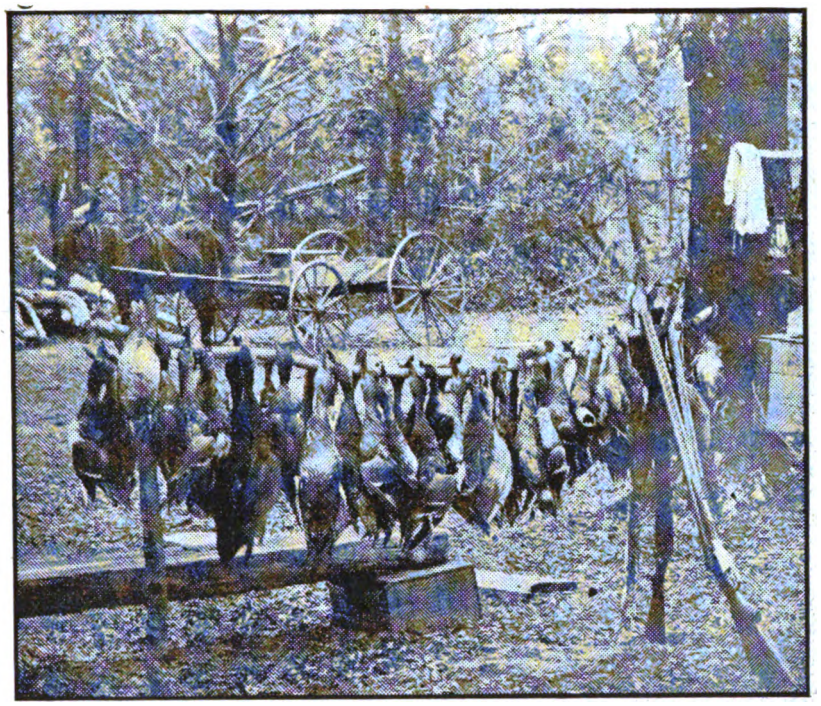
New Laws Passed in 1907.—Two Acts: Incorporating the Audubon Society of South Carolina with powers of a game commission, providing for wardens, prohibiting export except a limited amount under nonresident license, requiring the marking of packages of game, providing for a game-protection fund, substituting a $10 nonresident State license for the $25 county license and the special license for hunting on navigable waters, and lengthening the deer season in Dorchester County.

Close Seasons for Game.—1902-1907: Deer (see exception), January 1—September 1; Exception, Beaufort, Berkeley, Charleston, Clarendon, Colleton, Darlington, Dorchester, Florence, Hampton, Horry, Kershaw, Marion and Marlboro counties, February 1—August 1. Quail, partridge, pheasant, wild turkey, woodcock (see exception), March 1—November 15; Exception, Aiken, Barnwell, Beaufort, Berkeley, Charleston, Clarendon, Colleton, Dorchester, Fairfield, Georgetown, Hampton, Oconee and Saluda counties, April 1—November 1. Mongolian pheasant, three years, until January 1, 1910.

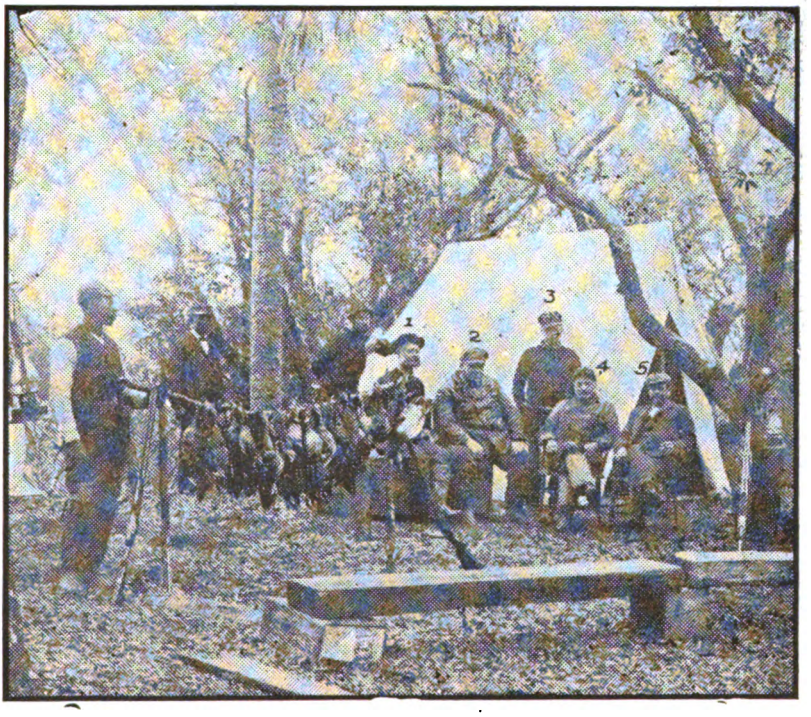
Export of Game Prohibited.—Deer, quail, partridge, grouse, pheasant, wild turkey, woodcock, snipe and other game birds or animals. Exception: Licensee may carry openly in his hand 2 deer, 50 partridges, 12 ruffed grouse, 4 wild turkeys, 50 beach birds, 50 wild ducks and geese in a season.

Sale of Game in Open Season Prohibited.—Deer until February 23, 1908; quail or partridge, pheasant, wild turkey and woodcock, taken in the State, until March 1, 1911.

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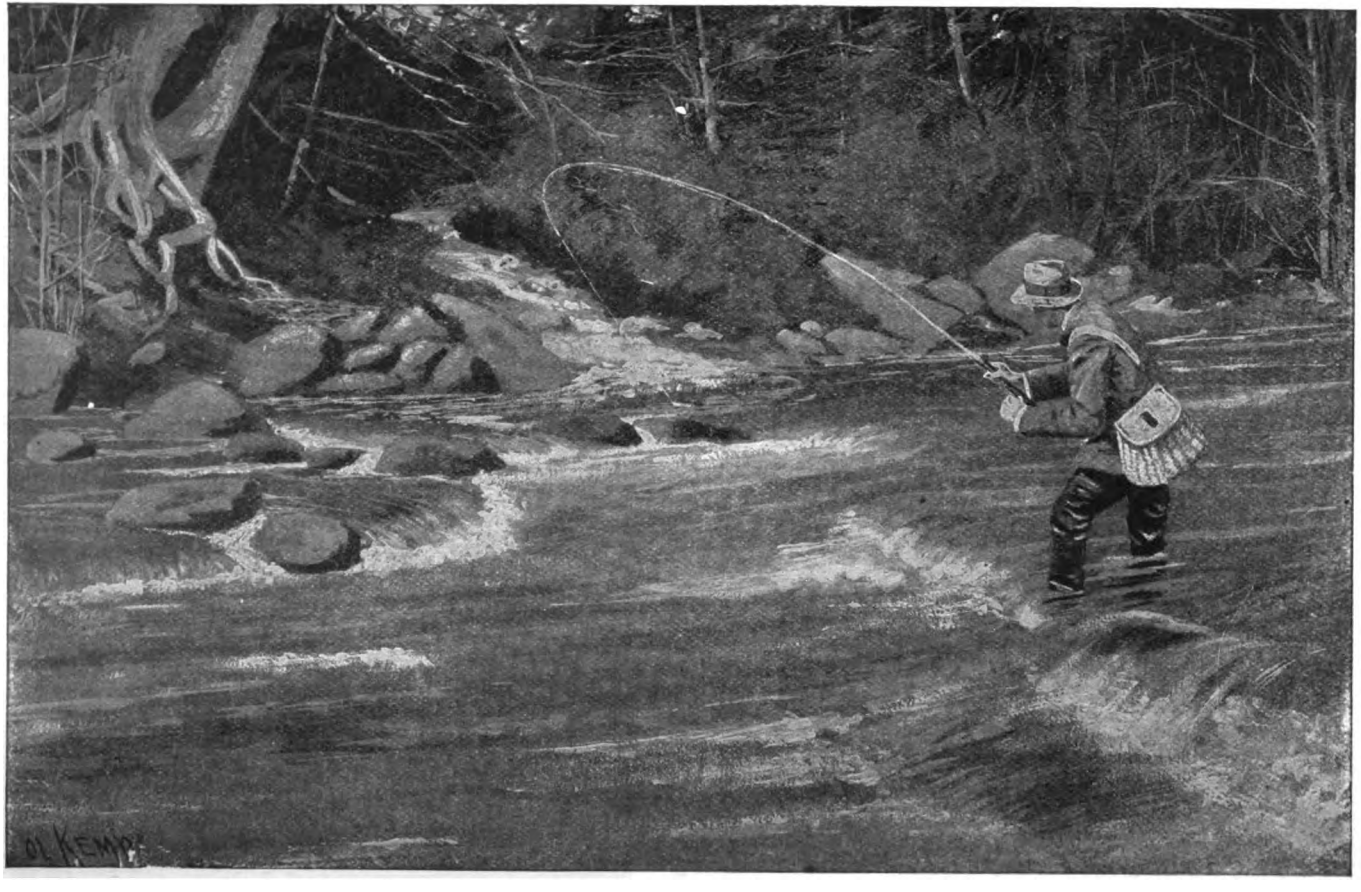
DUCK HUNTING—CAMP AT FORD'S POINT, GEORGETOWN COUNTY—A MORNING'S SPORT.



DUCK HUNTING—CAMP AT FORD'S POINT, GEORGETOWN COUNTY.

1, Capt. Lamberton, U. S. N.; 2, Grover Cleveland; 3, Capt. "Bob" Evans, U. S. N.; 4,, Gen. McCook, U. S. A.; 5, Capt. Ackley, U. S. N.

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TROUT FISHING.

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One may search all the pages of history and find that even from colonial days South Carolina has been a State of huntsmen and fishermen.

Describing the period between 1728 and 1763, McCrady writes: "The great sport was deer hunting, which was carried on by clubs as a social diversion. The members met once or twice a month, by turns providing a dinner in a plain building erected for the purpose and called the club house. They met early in the day, with their hounds, horses and guns. The hounds, usually in charge of a negro, soon found the scent, and no sooner was it found than in full cry the chase was begun. The woods, says Dr. Ramsay, reëchoed with sounds more exhilarating to the party than any musical instrument. From their knowledge of the country and the habits of the deer, the hunters knew the precise course the deer would take, and in anticipation of that would take different stands, but all ahead of the game, so that the terror-stricken animal would sometimes run the gauntlet of many guns; or at others, when the number was small, having missed a shot, the hunter would gallop through the woods with a swiftness



42 WOODCOCK ONE MORNING'S SPORT IN RICHLAND COUNTY.

exceeding that of the dogs, and reach another stand before the game approached it. The deer seldom ran its full course. He often fell before the first stand; he hardly ever escaped a second; sometimes he was killed by a shot from the hunter while at full speed. There was one of these clubs in St. Andrew's parish as early as 1761. The club house still stands on the church grounds."

The Acts of 1908.—No fox can be shot, trapped or killed between February 15th and September 1st, in York, Union, Chesterfield, Kershaw, Darlington, Lexington, Lee and Sumter Counties since the passage of an Act to that effect in February, 1908. In 1908 the law as to partridge and quail was amended so that it is unlawful for any person, except upon his own lands or another's, with the owner's consent, to net or trap any partridge or quail; and for any person to sell, offer for sale or export any partridge or quail for five years from February 20, 1907, provided such game offered for sale may be imported, the proof of importation, however, falling on the importer; that until January 1, 1912, it is unlawful to catch, kill or injure or "pursue, with such intent," any Mongolian pheasant. All non-residents in order to hunt game in any county, except by invitation of a resident freeholder, must have a license, which is good for one year, and costs $25.

Wardens of the Audubon Society are given all the powers of constables by a special Act of the General Assembly passed in 1908.

Fisheries.—A State Board of Fisheries has full control of all matters relating to fishing and oyster gathering for commercial purposes. The provisions of the laws governing this Board may be obtained from the Acts of South Carolina.

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SANTEE CYPRESS LUMBER COMPANY.

Chapter XV.---Forestry

The forests of South Carolina may be roughly classified as belonging to three types; the pure pine forests of the Coastal Region, the mixed forests of cypress and hardwood in the swamps of the low-country, and the mixed forests of pine and hardwood in the Piedmont Region.

Important Timber Trees.—The most important timber trees of the State are the pine and the cypress. Of the ten pines which are found within the limits of the State, only three are of any considerable economic importance, namely, the longleaf, the shortleaf and the loblolly pines. The Cuban pine is a valuable tree, but is restricted in its range to the immediate neighborhood of the coast.

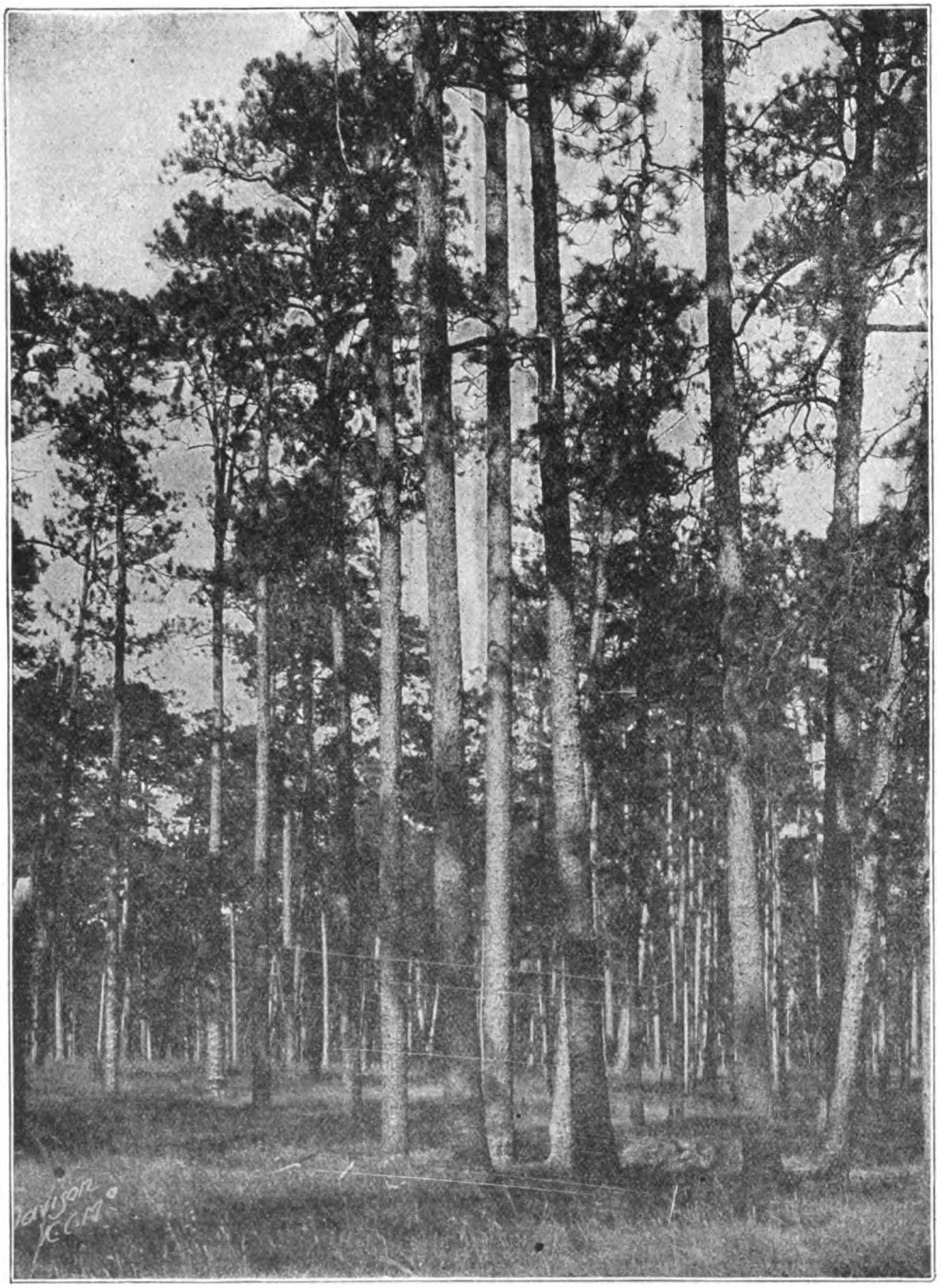
The lumber of these various pines is marketed as "Southern" or "yellow" pine, without any regard to the species from which it is derived.

Longleaf Pine.—The longleaf pine, which is justly regarded as the most valuable of all the timber pines, may be known by its long leaves, popularly called "needles" or "straw," and its large cones or burs. The leaves, which vary in length from eight to twelve inches, are arranged in bundles or clusters, the three leaves of each bundle being closely bound together at their bases by a sheath of dry scales. The cones are six to ten inches long, and the seeds, or mast, are one-half inch long and are provided with a "wing" nearly two inches long, by means of which they are disseminated. The trunk of the longleaf pine is erect and straight, with very little taper, and destitute of limbs for a great portion of its height. The proportion of heart to sap wood is great, and lumber cut from this tree is stronger and more durable than that from any other pine. The grain presents a great variety of pattern, and selected longleaf pine lumber is highly prized for interior finishings. Lumber of large dimensions, which brings the highest market price, is cut from this tree. It is also a most valuable pine for the production of turpentine. It thrives in all parts of the Coastal Plain, preferring dry, sandy soils, but it is not confined to this region, considerable forests of it being found above the fall line. A line drawn through the northern end of Lexington County, running parallel to the coast, approximately marks its northern limit.

Shortleaf Pine.—The shortleaf pine is found in all parts of the State, but reaches its best development in the upper part of the Coastal Plain and the lower part of the Piedmont Region. It may be distinguished from the longleaf pine by its much shorter leaves and smaller cones. The leaves are three to five inches long and are arranged in clusters of two or three leaves to the cluster, though two is the usual number. The cones are from one and one-half to two inches long. The lumber from mature trees of this species is little inferior to that of the longleaf pine and is highly prized. The shortleaf is the pine of the up-country, where mixed with hardwoods, it is called "woods" pine, or when in pure stands of second growth it is called "old field" pine.

Loblolly Pine.—The loblolly pine has a somewhat wider range than the longleaf pine, though usually associated with it, occupying the lower and moister ground. It is rather common in association with hardwoods and the shortleaf pine in the Piedmont Region as high as Newberry County. In the low-country it is

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LONGLEAF PINE.

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called "old field" pine or "shortleaf" pine, and is regarded with little favor. In the size of its cones and in the length of its leaves it occupies an intermediate position between the long and shortleaf pines. The leaves, which are six to nine inches long and arranged in hundles of threes, are of a paler green than the leaves of either of the other pines. The cones are three to five inches long. Lumber produced from it is good, though somewhat inferior to that produced from the long and shortleaf pines, owing to its coarser grain. The loblolly pine deserves a better name, and it is rapidly coming into its own. Formerly neglected by the lumbermen, it is now being cut, and since it is becoming better known to the trade, is finding a ready market. Its coarser grain is due to its rapid growth. In fact, the fineness of grain of any pine is in proportion to the slowness of its growth. Even the longleaf pine produces a coarse grained lumber when it has grown very rapidly. The "woods" pine of the up-country, which is prized for its fine grained and durable lumber, owes these valuable qualities to its slow growth in consequence of its crowded condition among the hardwoods of

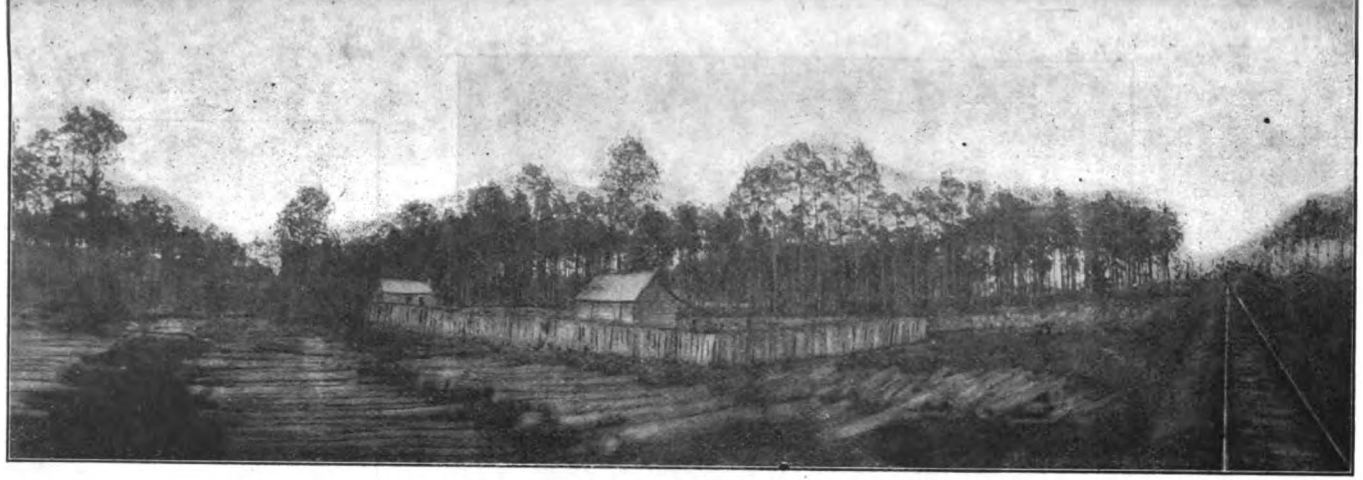


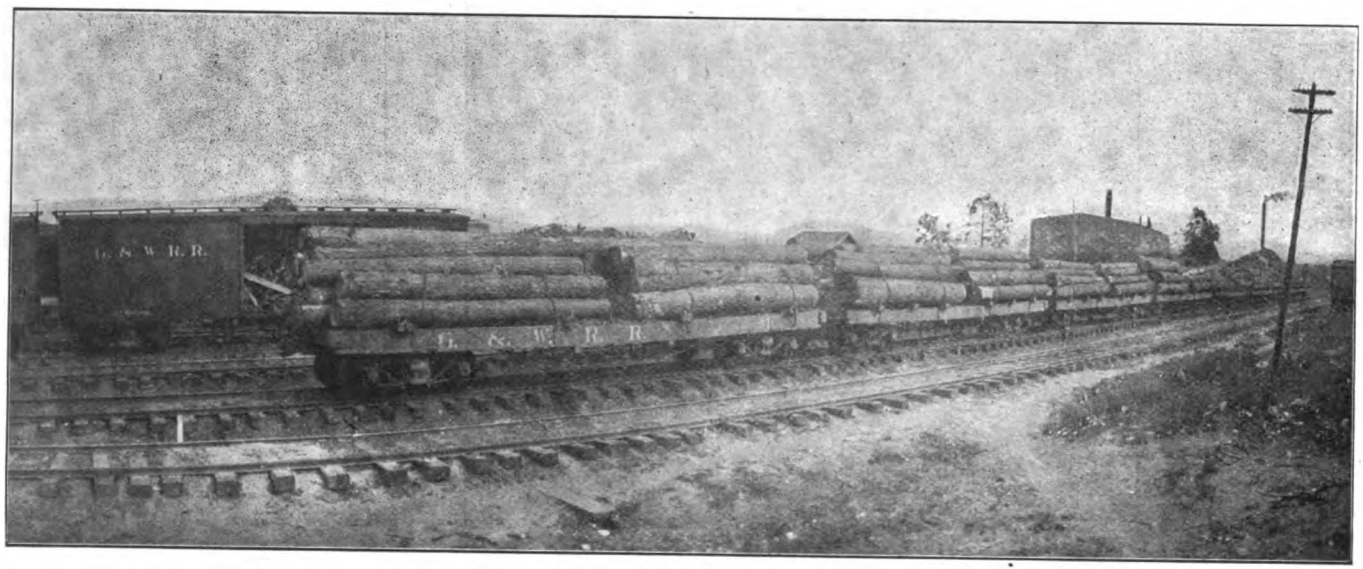
A FOREST SCENE.

the forest. The loblolly pine is an abundant seeder and the seedlings grow very rapidly, hence it is rapidly replacing the cut-over forests in its range. Its prolificness, its rapid growth, and its ability to thrive in either dry or wet ground, make it one of our most valuable timber trees. In Texas it has been found that trees 40 years old have an average diameter of over 12 inches and will cut 9,300 feet B. M. per acre. Longleaf pine trees of the same age in South Carolina are five inches in diameter and 78 years are required to grow trees of this species 12 inches in diameter. It has also been found that while a longleaf pine 12 inches in diameter will yield 100 feet of lumber, a loblolly of equal diameter will yield 109 feet.

Cypress and Juniper.—Cypress, the most valuable tree of our swamps, is a slow growing tree, producing very light and durable timber. Formerly it was chiefly prized for shingles, some of which are known to have lasted more than fifty years. Now it is being cut for other kinds of lumber. The cypress reproduces

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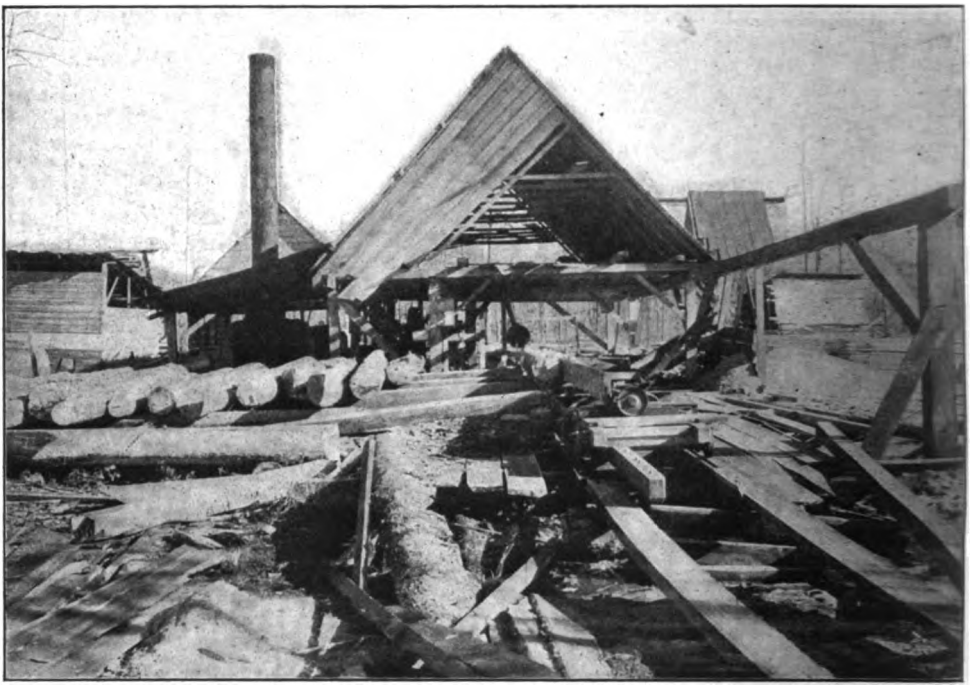
THE LUMBER INDUSTRY AT GEORGETOWN.

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slowly, and when the present supply is exhausted, it will be many years before another is ready for the axe.

Another coniferous tree of considerable importance in the swamps of the low-country is the juniper, or white cedar. It is valuable for telephone and telegraph poles, being a durable wood in contact with the soil.

Hardwoods.—The hardwoods of the State have not been cut as extensively as the conifers. There has been some lumbering on a commercial scale in the swamps and in the neighborhood of the mountains. As a rule the hardwood forests are in small holdings and are cut for fire-wood or for farm use, while the more extensive pine forests are held by large lumber companies and are cut for the market.



AT THE SAW MILL.

TABLE I.—ROUGH LUMBER PRODUCED IN SOUTH CAROLINA BY SPECIES.

	1907. Ft. B. M.	1905, Ft. B. M.	1905, Value.
Conifers	.....	580,504,000	$5,706,675
Pine	606,976,000	549,209,000	5,205,166
Cypress	.....	31,187,000	500,623
Other kinds	.....	108,000	886
Hard Woods	.....	29,265,000	419,802
Oak	.....	12,296,000	172,429
Ash	.....	4,213,000	71,027
Cottonwood	.....	4,660,000	66,210
Poplar	.....	3,950,000	62,215
Gum	.....	3,360,000	31,917
Other kinds	.....	786,000	16,004
Total all kinds	.....	609,769,000	$6,126,477

Table 1 gives the production of rough lumber by species in South Carolina for the year 1905, as compiled by the United States Census Bureau.

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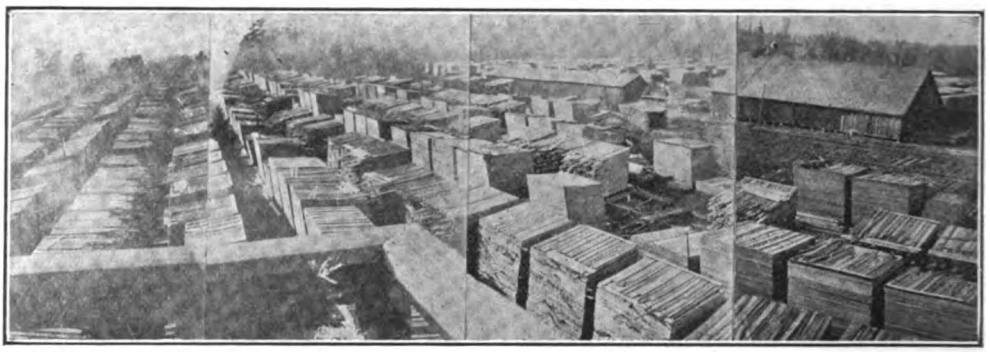
LUMBERING IN SOUTH CAROLINA.

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TABLE 2.—LUMBER AND TIMBER PRODUCTS—COMPARATIVE STATEMENT FOR 1905 AND 1900.

	U. S.		S. C.		Per Cent. Gain or Loss.	
	1905.	1900.	1905.	1900.	U. S.	S. C.
No. establishments..	19,127	23,053	439	466	— 17	— 6
No. wage-earners...	404,626	413,335	9,656	6,622	— 2	+ 45
Capital	$517,224,128	$400,857,337	$7,237,725	$3,469,984	+ 29	+ 108
Wages	183,021,519	148,007,845	2,578,320	1,356,705	+ 23	+ 90
Cost of material...	183,786,210	242,685,257	1,617,713	1,809,009	+ 24	+ 11
Value of product...	580,022,690	555,197,271	6,791,451	4,942,362	+ 4.3	+ 37.6

Table 2 gives a comparative statement of the lumber and timber products of South Carolina and the United States in 1900 and 1905. An examination of this table reveals the fact that South Carolina has made considerable gain within the five-year period covered. While the capital engaged in the production of lumber and timber in the United States increased 29 per cent., in South Carolina it increased 108 per cent. The value of the product in the United States increased 4.3 per cent., while that in South Carolina increased 37.6 per cent. The number



LUMBER YARD OF THE SANTEE CYPRESS LUMBER COMPANY.

of wage-earners and the amount paid out as wages shows a much greater relative increase in South Carolina than in the United States. In the cost of materials alone does the increase in the United States exceed that in South Carolina. This indicates that while the supply of timber in the United States is being rapidly exhausted, the supply in South Carolina has not as yet been so far depleted as to cause a considerable rise in stumpage values. This condition cannot obtain long, however, since South Carolina will be called upon to supply the deficiency in the markets caused by the exhaustion of the forests in other parts of the country.

Table 3 gives in detail the statistics for logging, saw mills and planing mills in 1905, and shows the rank of South Carolina among the States of the United States in 1900 and in 1905. South Carolina has in each case moved up from one to five points in rank.

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TABLE 3.—LOGGING OR TIMBER CAMPS, SAW MILLS, AND PLANING MILLS—1905.

		No. Establishments.	Capital.	Wage-earners.	Wages.	Cost Materials.	Value Products.	Saw Logs M. ft. B. M.
U. S.	Logging	12,494	$ 90,454,494	146,596	$ 66,989,795	$ 80,412,828	$236,131,048	27,980,768
	Saw Mills	18,277	381,621,184	223,674	100,310,891	263,865,101	491,524,662	.....
	Planing Mills	9,486	222,294,184	132,030	66,434,440	273,276,381	404,650,282	.....
S. C.	Logging	333	$ 1,191,450	3,944	$ 1,003,582	$ 852,954	$ 2,753,746	472,055
	Saw Mills	432	5,374,491	4,951	1,364,806	2,936,989	6,200,919	.....
	Planing Mills	161	1,618,970	1,735	502,253	2,628,482	3,577,905	.....

Rank of S. C. Among States		1905.	1900.	1905.	1900.	1905.	1900.	1905.	1900.	.....	1905.	1900.	1905.	1900.
	Logging	17	19	24	27	18	22	23	26	.....	25	27	21	26
	Saw Mills	18	19	26	30	22	24	25	29	.....	26	29	..	..

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TABLE 4.—PRODUCTION OF SHINGLES, COOPERAGE MATERIALS AND VENEER, 1905.

	Value.	
	U. S.	S. C.
Shingles	$24,009,610	$204,616
Cedar	16,288,222	4,800
Cypress	3,359,620	101,434
Pine	2,652,404	97,761
Other kinds	1,709,364	621
Cooperage:		
Staves	19,082,641	6,000
Headings	7,436,259	1,607
Hoops	3,159,973	1,560
Veneers	4,880,295	.....

Cooperage and Veneer.—There are several mills in the State producing veneer, but definite figures in regard to their output have not been obtained. It will be observed by an examination of the foregoing table that South Carolina is doing very little in the production of cooperage stock. The hardwood forests of the State present great opportunities for the development of this industry. There are also great possibilities in further developing the production of veneers. Many hardwoods of the swamps, notably, sweet gum, black gum, tupelo, cotton wood and sycamore, which have hitherto been regarded as practically worthless, are valuable for the production of this kind of material.

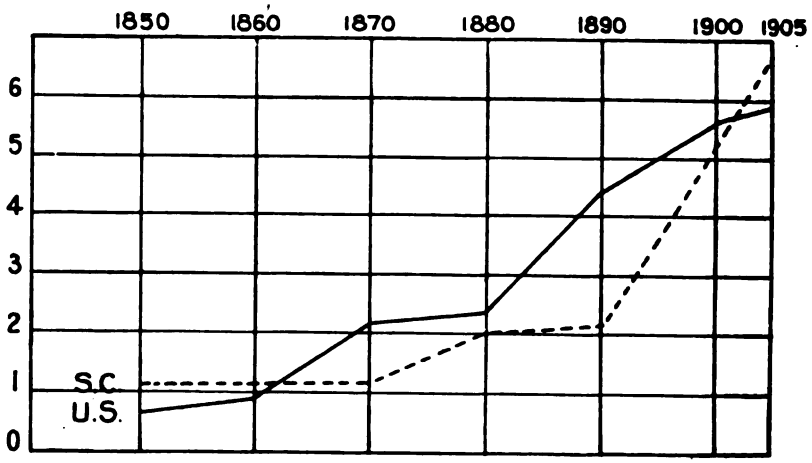
TABLE 5.—VALUE OF LUMBER AND TIMBER PRODUCTS FROM 1850 TO 1905.

	S. C.	U. S.
1850	$1,125,280	$ 60,413,187
1860	1,125,640	96,715,856
1870	1,197,005	210,159,327
1880	2,031,507	233,268,729
1890	2,146,750	437,957,382
1900	4,942,362	555,197,271
1905	6,791,451	580,022,690

Table 5 shows the value of the lumber and timber products of South Carolina and the United States from 1850 to 1905.

The same facts are brought out by the use of curves in Table 6. In the case of South Carolina the spaces represent $1,000,000, and in that of the United States $100,000,000.

TABLE 6.—VALUE OF LUMBER AND TIMBER PRODUCTS FROM 1850 TO 1905.



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The value of the lumber products of the United States increased at a fairly uniform rate between 1850 and 1905. Those of South Carolina increased little between 1850 and 1870, but between 1870 and 1890 a considerable advance was made, and between 1890 and 1905 an enormous rate of increase was attained.

Annual Cut of Lumber.—The foregoing statistics were compiled from Bulletin 77 of the United States Census Bureau. The figures furnished the Census Bureau in making up the statistics were from plants engaged in the production of lumber and timber products on a commercial scale. No account was taken of small concerns and private saw mills producing lumber for private or local consumption. The total amount of lumber produced in the State by the large concerns quoted was 609,769,000 feet B. M. It is probable that the output of the small mills was sufficient to bring the total up to 1,000,000,000 feet B. M. To this must be added the timber used for telegraph and telephone poles and for hewed railroad ties. No accurate figures are at hand for the number of poles produced, but from data obtained from the State Railroad Commission it appears that, for the year 1906, 1,500,000 ties were laid by the railroads, and this is about what should be expected, since it requires about 300 ties annually to maintain a mile of railway and there are nearly 5,000 miles of railroad in the State. A tie contains about 30 feet B. M., hence the railroads in the State use annually for ties alone the equivalent of 45,000,000 feet of lumber. As a rule the railroads obtain their ties along their lines, and it is probable that the number of sawed ties included in the lumber product of the State given in Table I is not very large. This is more than offset by the ties exported.

Fuel.—The consumption of firewood in the State is something enormous. According to the Census of 1880, it was estimated that the consumption of fuel in the United States was three cords per capita. The per capita consumption is probably less now than at that time, but in South Carolina the decrease has not been so great as in some other States. Hence it is not improbable that at least two and a half cords per capita are now burned in this State annually. The population of the State is 1,500,000, therefore the annual consumption of fuel amounts to approximately 4,000,000 cords, or the equivalent of 2,000,000,000 feet B. M.

It will thus be seen that the annual cut of lumber, timber and fuel in the State is approximately 3,000,000,000 feet. How long will the supply last at the present rate of consumption?

Present Supply.—Table 7 gives the total amount of standing timber reported as held by lumbermen in the State as 4,387,000,000 feet. The large concerns reporting these holdings report an annual cut of 609,000,000 feet. Hence their holdings will be exhausted in a little over seven years. It is probable, however, that not more than one-third of the available timber of the State is in the hands of the lumbermen, hence the present supply should last something over 20 years at the present rate of cutting.

TABLE 7.—QUANTITY OF STANDING TIMBER REPORTED AS OWNED BY LUMBERMEN IN SOUTH CAROLINA IN 1905.

	Ft. B. M.
Yellow Pine	3,363,100,000
White Oak	194,000,000
Cypress	727,700,000
Cedar	300,000
Other kinds	102,000,000
Total	4,387,100,000

Let us attack the problem from another standpoint. Of the 19,000,000 acres in South Carolina, 13,000,000 or 68 per cent. are estimated to be wooded. Much of this area consists of waste and cut-over land. No accurate data are at hand upon which to base an estimate of the amount of standing timber in the State. It is, however, probable that 5,000,000 acres of the area consists of waste or cut-over lands with practically no merchantable timber at the present, or leaving about 8,000,000 acres of timber forests. From a survey by the Bureau of Forestry of 40,000 acres in Berkeley County, belonging to the E. P. Burton Lumber Company, it appears that the average stand per acre is about 6,000 feet B. M. A survey of 60,000 acres in Hampton and Beaufort counties shows an average of about 5,000 feet per acre. A similar survey of a large body of pine lands in Central Alabama shows an average of 10,000 feet per acre, and a survey of lands

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near Pine Bluff, Arkansas, shows an average of 6,000 feet. Measurements have been made by the writer upon several small tracts in the neighborhood of Columbia, with the following results: First, second growth loblolly pine with trees about 50 years of age and measuring 10 or 12 inches in diameter, 5,700 feet; second, virgin forest of oak, hickory and loblolly pine, 7,500 feet; third, old stand of shortleaf pine with some oak, 7,500 feet. It would, therefore, appear that 5,000 feet per acre would be a fair estimate for the stand of merchantable timber in the State, or a total of 40,000,000,000 feet. Estimating that the 5,000,000 acres of waste or cut-over lands would average 1,000 feet per acre, we get a grand total of 45,000,000,000 feet as the amount of standing timber in South Carolina today.

Exhaustion of the Supply.—What is the annual increase of the forests? Mr. Filibert Roth, in his report on "Forest Conditions and Interests of Wisconsin" in 1898, estimated the annual increment at 100 feet B. M. per acre per year. In Circular No. 129 of the Forest Service, "The Drain Upon the Forests," recently from the press, Mr. R. S. Kellogg, Chief of the Office of Wood Utilization, estimates the annual growth for the United States under present conditions as not more than 60 board feet per acre. Taking the highest estimate, the 13,000,000 acres of wood land in South Carolina are producing 1,300,000,000 board feet annually. Deducting this amount from the estimated annual cut of 3,000,000,000 feet, there remains 1,700,000,000 feet as the annual drain upon the forests of the State.

If our estimate of the present amount of standing timber in the State of 45,000,000,000 board feet be correct, it is quite clear that at the present rate of consumption the supply cannot last more than 25 years.

It must not be forgotten that the wooded area is being reduced annually by the conversion of forests into agricultural lands, and the total annual increment must, therefore, be considerably reduced.

Possibilities.—While present wasteful methods of forest utilization will soon exhaust our timber resources, there need be no fear of a timber famine if present conditions are realized and steps are at once taken to apply better methods in caring for and using the forests. The present forest acreage of South Carolina is enough to supply the needs of a much more populous State, but since much of the present acreage will be ultimately cleared and put under cultivation, it will become necessary to give greater care to the remaining forests in order to make them yield a greater return. It is probable that about 8,000,000 acres of swamps, hills and other lands unsuitable for agriculture should remain permanently in forests. This would, under proper forest management, yield 800,000,000 board feet annually, or enough to furnish each inhabitant of the State 400 board feet, the amount now cut per capita in the United States. In Europe each inhabitant gets along with 62 board feet. The forests of Switzerland, Germany and other countries of Europe, which have been under scientific forest management for from 100 to 600 years, have gradually increased in productiveness and are today better than they were in their virgin condition.

By careful treatment of the forests in Saxony, between 1820 and 1890, the annual cut was increased 50 per cent. Similar and even better results can be obtained in South Carolina. An estimate upon a tract of loblolly pine near Columbia, already referred to, shows an annual growth considerably greater than that estimated for the United States at large. The tract measured 7,500 board feet per acre, and since the trees are 50 years old, the annual increment must have been 150 board feet. This result was attained with absolutely no attention to the forest. With proper care there is no reason why this amount should not be greatly increased.

There is great need for more accurate figures showing the actual condition of the forests of the State and the possibilities of increasing their productiveness. The State should at once take steps to collect this information.

Forest Legislation.—There has been little legislation in South Carolina bearing on the forests. The most important and far-reaching act ever passed by the Legislature of the State in its bearing upon the forests was the General Stock law. In certain parts of the State the annual drain upon the forests to supply rails with which to fence crops against the cattle which, ran at large, became large enough to split for rails. This was especially the case in the Piedmont Region, where there was a large percentage of cleared lands. Not only were the forests being stripped of rail timber, but reproduction of the forests was prevented by the cattle, which ran at large, browsing on the young trees and destroying them as fast as they made their appearance. Since the passage of the Act requiring that cattle be enclosed in pastures, the appearance of the woods has been completely changed. Formerly there was practically no undergrowth, the forests presenting an open, park-like appearance. Now these same forests are growing up with a thick undergrowth of saplings, making it difficult to get

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through them. Under the former condition when the mature trees were cut the forests were practically worthless. Now when the large trees are removed, they only give place to young and vigorous ones. The General Stock law has, therefore, not only served to greatly reduce the annual drain upon the forests, but has at the same time made it possible for them to reproduce themselves.

In the more unsettled portions of the State, near the mountains and near the coast, where most of the land is yet in forests, it is still the custom to permit stock to run at large, and numerous exceptions to the general stock law have been made in order to legalize this practice. It is a question whether or not this practice is profitable. In those parts of the State where it is required to fence cattle there has resulted a great improvement in breeds and the attention given to stock, and it is certain that a similar result would follow in other parts of the State were the exceptions to the stock law removed. Better stock and better forests are topics worthy of careful consideration.

Forest Fires.—Fires are of even greater damage than grazing in the prevention of the reproduction of forests. According to all writers on the subject, fire is the greatest enemy to the forest. The annual loss of timber in the United States by fire amounts to many millions of dollars, not to mention the loss due to the destruction of all young growth. In Massachusetts, with a forest area of one-fifth that of South Carolina and with excellent fire laws, it has been estimated that the annual damage done by forest fires amounts to $60,000. The amount of damage by fire to the forests of South Carolina is not known, and statistics upon this subject would be of great value. In the pine lands of the low-country it is the custom to burn off the woods annually, or sometimes twice a year, to remove the litter so as to permit the growth of a few scanty grasses; thus the accumulation of litter is never great and the consequent damage to the large trees, except in the turpentine regions, is comparatively small, but reproduction is absolutely prevented, since all seeding trees are annually destroyed.

Wasteful Methods.—Present methods of using the forests are very destructive, but great improvements have been made in recent years. Formrly it was customary when clearing land to roll the logs into a pile and burn them along with the brush. This custom probably no longer prevails in any part of the State, but still present methods of lumbering are exceedingly wasteful. Since only 50 to 75 per cent. of a tree may be cut into saw logs, 25 to 50 per cent. of it is wasted. If wood-cutting and lumbering could be combined, there would result a great saving. Economic conditions are not such at the present time as to make this practical, but the time is rapidly approaching when it will be. In getting out saw logs, little regard is had for the future. In the felling of trees and in the removal of the logs the young growth is badly damaged, and the lumberman leaves behind him a scene of desolation. Waste at the saw mill has been as great as in the forest, but it is encouraging to know that improvement is being made both in the forest and at the mill. Several of the large lumber companies of the State have had their holdings examined by experts with a view to cutting them to the best advantage and of making them produce a continuous supply of logs. Notable improvements have also been made in the utilization of the waste of the saw mills. The greatest possible amount of lumber is now cut from the logs, and slabs are cut into laths and other forms of marketable lumber. The waste from the slabs and even the sawdust are utilized as fuel.

Varied Industries.—While lumber constitutes the bulk of the products of the forests of South Carolina, there are a number of plants in the State producing other kinds of material. There are two establishments producing veneer. The abundant supply of sweet gum, black gum, tupelo, sycamore, etc., in the swamps and along the water courses makes it possible for this industry to be greatly extended. The exhaustion of the white pine of the North, formerly extensively used for goods boxes, will bring into the market other materials for this purpose, and no better material can be found than the veneer produced in South Carolina. Crates for shipping fruit and trays for the handling of butter, etc., are largely being supplied from this material.

Paper pulp is being successfully manufactured in Hartsville, Darlington County, from second growth loblolly pine. This rapidly growing tree can supply an enormous quantity of wood for this purpose for all time, and there are other soft woods in the State which can also be used in the manufacture of paper pulp. The paper pulp industry in the United States is an important and rapidly growing one. In 1906 there were used for this purpose 3,661,176 cords of wood valued at $26,411,887. There is no reason why South Carolina should not supply a larger proportion of this material than she is now doing. The manufacture of telephones in Sumter and buggies in Rock Hill consumes a considerable quantity of timber. These are but a few of the many plants

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dependent upon forest products. There are great possibilties for the establishment of plants for the manufacture of wagons and buggies, furniture, coffins and boxes, baskets, cooperaged stock, excelsior, charcoal, tannin and novelties of various sorts.

Turpentine.—The production of turpentine and rosin is an important industry in South Carolina. The longleaf pine is not only the most valuable timber tree of the State, but it is also the most valuable for the resin which it yields. This tree has, therefore, been singled out by lumbermen and turpentine operators, and the best longleaf pine timber has either been cut by the lumberman or boxed by the turpentiner. The trend of the turpentine industry has been Southward. The forests of North Carolina and South Carolina were first invaded; then, in order, those of Georgia, Florida, Alabama, Mississippi and Louisiana. Since trees yield resin in paying quantities for only about four years, the incessant tapping of new trees has so reduced the visible supply in the South that experts estimate that the industry there, if carried on at the same rate, cannot last over 15 or 20 years more.

TABLE 8.—PRODUCTION OF TURPENTINE AND ROSIN IN SOUTH CAROLINA FOR 1900 AND 1905.

	1900.	1905.	Per cent. Decrease
No. establishments	132	79	40
No. wage-earners	886	169	81
Capital	$268,719	$ 91,637	66
Wages	135,575	37,000	73
Miscellaneous expenses	8,297	15,878	47
Cost of materials	471,261	373,568	20
Value of products	787,656	574,150	27

From Table 8 it will appear that South Carolina along with other Southern States has suffered a considerable decrease in the production of turpentine in the last five years. It will be observed, however, that while the capital employed and wages paid have decreased respectively 66 and 73 per cent., the value of the product has decreased only 27 per cent. The increase in the price of the product and improvements in the method of collecting the raw material will make this industry continue as an important one in the State.

Chemical Products.—The chemical utilization of wood is rapidly becoming a great industry. The value of the product of hardwood distillation in the United States for 1906 was over $8,000,000, and that of pine for the same period was $380,170. South Carolina produced from the distillation of pine an output valued at $29,152.

TABLE 9.—PRODUCTS OF PINE DISTILLATION IN SOUTH CAROLINA IN 1906.

	Quantity.	Value.
Turpentine	33,242 gallons	$13,092
Tar	69,000 gallons	5,100
Charcoal	25,000 bushels	1,500
Oil of Tar	39,500 gallons	4,600
Pyroligneous Acid	81,000 gallons	4,050
Total		$28,342

The distillation of old pine stumps for turpentine and other products opens up an attractive field for investment. The rapid exhaustion of existing turpentine orchards will make this industry a profitable one.

Regulation of Stream Flow.—Not only are the forests of South Carolina worth many millions of dollars in lumber, timber, fuel and other products to the people of the State, but they are also of incalculable value in the conservation of rainfall and in the regulation of stream flow. It is a matter of common observation that the greater part of the water which falls upon a forested area sinks into the soil and serves as a future supply to the trees or finds outlets at a lower level as springs, while the greater part of that which falls upon cleared or cultivated lands runs off, carrying with it much of the soil.

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TABLE 10.—COMPARISON OF A TREELESS AND A WOODED AREA IN THEIR EFFECT UPON STREAM FLOW.

	Queen Creek, Arizona.	Cedar Creek, Washington.
Area of basin	143 sq. mi.	143 sq. mi.
Rainfall	1 sq. mi.	8 sq. mi.
Maximum flood discharge per second	9,000 cub. ft.	3,600 cub. ft.
Mean flood discharge per second	15 cub. ft.	1,089 cub. ft.

A striking example of the effect of forests upon stream flow is found in the comparison which has been made between Queen Creek, Arizona, and Cedar Creek, Washington. These streams drain 143 square miles each. The first occupies a treeless region, while the basin of the second is heavily timbered. In 1906 the rainfall in the valley in Cedar Creek was eight times as great as that which fell in the valley of Queen Creek. And yet we find the remarkable fact that the mean flow of the former was 1,089 cubic feet per second, while that of the latter was only 15 cubic feet. This means, of course, that the latter was dry a large part of the year, while the other furnished a steady flow. Equally striking is a comparison of the two streams at flood time. Queen Creek showed a maximum flood discharge per second of 9,000 cubic feet, while Cedar Creek showed only 3,600. The flood discharge of the stream in the treeless region was 500 times its mean flow, while that of the stream in the forested region was only 3½ times as great.

These results seem to show beyond a doubt that a high mean flow and a low flood discharge are closely connected with the existence of forests in the drainage basin. These facts are of especial significance in those regions where manufacturing is dependent upon water power and where agriculture is dependent upon irrigation.

Water Power.—South Carolina falls in the first class. Her rivers furnish a large number of valuable water powers. It has been estimated that 125,000 horse power have already been developed, and that 175,000* horse power are still capable of development. Fifty-one mills, representing a capital of over $8,000,000, are run in whole or in part by water power. Many of these find it necessary during the summer and fall months to supplement their power by steam, because at that time the streams run low. During the winter and spring the flow is more than enough, and, indeed, at times is so great as to cause much damage. Some mills are trying to overcome this disparity of flow by the erection of storage dams, but the rapid filling of these with sediment washed from the hills will eventually render them useless. The only practical way to conserve the supply of water is to keep the head waters of the streams well forested.

TABLE 11.—COTTON MILLS OPERATED BY WATER POWER IN SOUTH CAROLINA. (FROM STATEMENT OF MR. AUGUSTINE T. SMYTHE BEFORE CONGRESSIONAL COMMITTEE ON AGRICULTURE, APRIL 25, 1906.)

Number of mills	51
Capital	$ 8,589,500
Spindles	910,102†
Bales of cotton	164,700
Annual product	$14,537,677
Number of hands	11,990
Horse power	18,895

†Corrected to date.

Appalachian National Forests.—Most of the streams of South Carolina have their source in the Appalachian Mountains, beyond the borders of the State, hence the control of the forests in these regions is beyond the jurisdiction of this State and is a matter which the National Government should take in hand. The passage by Congress of the bill now pending for the establishment of the Appa-

*Recent investigations by the Forest Service lead to the belief that this figure may be raised 100,000 horse power.

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lachian National Forests, to include the high mountain ranges, is a matter of great importance to this as well as to other Southern States, and it is to be hoped that the bill may become a law during the session of the present Congress.

The frequent floods of recent years, due to the deforestation of the head waters of the streams is making agriculture upon bottom lands impossible, and many acres which once grew an abundance of corn are now abandoned to weeds and bushes. The damage caused by these floods amounts annually to several millions of dollars.

The navigable streams of the State are being so filled with sediment that they are being closed to commerce at a time when they are specially needed to carry the merchandise of a rapidly developing State. Instead of spending annually large sums of money to dredge these streams, the Government should remove the cause of the trouble by establishing forest reserves in the Appalachian Mountains, where the streams originate.

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LARGEST OFFICE BUILDING IN THE STATE.

Chapter XVI.

THE PRINCIPAL CITIES

No task could be more difficult than to attempt in a volume of the scope of the present one an adequate idea of the principal cities and towns. In the first place space forbids a treatment that properly would and should require a separate handbook. In the second place, in dealing with facts about cities and towns, each of which is developing industrially by leaps and bounds, a perfectly natural and most commendable rivalry makes whatever may be said subject to criticism; and finally there are but few accurate figures in regard to these municipalities of later issue than the census of 1900.

For the reasons above given the briefest possible summary, merely designed to give the inquirer essentials from a commercial point of view, is attempted at this time, and no effort to trace the history of the various cities and towns is made, this being merely incidentally referred to in the most conspicuous instances. As a general thing, prosperity is found in every town of any size in South Carolina, and nowhere in the South is industrial and commercial growth more rapid and substantial. Municipal improvements of every kind, modern waterworks, paved streets, electric railway lines, and modern school buildings are the order of the day and civic improvement work is making marked advances. Hardly a town of any consequence is without an electric lighting plant. New and attractive railway stations have in the past few years been erected in many of the towns, and throughout the list of the towns of the State civic pride is lending its potent influence in the making of each town an attractive place in which to live.

It is impossible to even give statistical comparisons showing the rapidity of the growth of the towns and cities particularly those in the Piedmont section, but what can be included indicates the continuance of the growth. In all cases the population figures of the United States census are based on United States Government estimates of population; where the 1907 figures are given in Table I, which shows also the capital and value of products of the cotton manufacturing plants, they are simply estimates based strictly on the preceding decennial increase of population for the particular town. In the treatment of the towns individually are included the population estimates made by Chambers of Commerce and such organization furnishing data.

It only remains to be said that diversified manufactures and industries are becoming more general in all portions of the State, and that, while the commercial importance of all these towns had its principal development since 1880, the present percentages of increase are very much larger than at any period preceding. Banking has developed wonderfully and some even of the smaller towns have not only one but two prosperous banks. A notable instance of this is the town of Batesburg, in Saluda County.

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TABLE I.—THE POPULATION AND COTTON MANUFACTURING IMPORTANCE OF PRINCIPAL SOUTH CAROLINA TOWNS.

	Population. 1900.	Population. 1907.	Capital Stock.	Value Yearly Product.
Abbeville	3,766	5,215	$ 642,700	$ 650,000
Aiken	3,414	4,149	.....	.....
Anderson	5,498	7,234	3,014,500	5,572,773
Bamberg	1,533	2,121	140,000	185,000
Barnwell	1,329	1,602	.....	21,000
Beaufort	4,110	4,474	.....	.....
Bennettsville	1,929	2,696	.....	.....
Camden	2,441	4,296	450,000	490,000
Charleston	55,807	56,472	451,000	1,000,739
Chester	4,087	5,024	600,000	1,955,000
Columbia	21,208	25,133	5,562,900	4,827,302
Darlington	3,028	3,469	1,000,000	600,000
Florence	4,647	5,522	.....	.....
Gaffney	3,937	5,549	1,140,700	1,562,500
Georgetown	4,138	5,006	.....	.....
Greenville	11,860	14,135	4,147,900	4,556,744
Greenwood	1,326	5,407	623,300	1,150,000
Lancaster	1,477	1,753	1,000,000	1,400,000
Laurens	4,029	5,275	600,000	1,004,573
Manning	1,430	1,682	.....	40,000
Marion	1,831	1,964	75,500	159,850
Newberry	3,020	4,875	830,000	1,900,000
Orangeburg	4,450	5,568	275,000	610,000
Rock Hill	5,485	6,423	298,700	500,000
Spartanburg	11,395	15,490	2,203,000	3,318,800
Summerville	2,430	2,630	.....	.....
Sumter	5,673	6,933	42,800	101,500
Union	5,400	8,053	7,020,000	4,580,000
Walhalla	1,307	1,643	176,000	400,000
Walterboro	1,491	1,705	100,000	76,000
Winnsboro	1,765	1,779	.....	.....
Yorkville	2,030	2,257	.....	.....

The United States Census Bureau's recently issued estimates of population gives the following population figures for the four principal cities in South Carolina, Spartanburg, according to these figures, supplanting Greenville in the third place; the figures as to the manufacturing of these cities are given in the chapter on manufacturing:

	1900.	1890.	Decennial Inc.	1906.	Land area in acres.
Charleston	55,807	54,955	.852	56,317	2,406.4
Columbia	21,108	15,353	5.755	24,564	2,584.2
Greenville	11,860	8,607	3.253	13,810	3,142.4
Spartanburg	11,395	5,544	5.851	14,905	4,522.4

1—*Charleston*, founded in 1670, is the metropolis of South Carolina, her population at this time being estimated to be 65,000. As shown elsewhere, along with other facts as to the port, Charleston possesses the largest and deepest harbor on the South Atlantic coast, has the United States Navy Yard and Dry Dock, capable of holding the largest vessels in the navy; is headquarters for the United States Artillery District of Charleston, with a garrison of 500 men; is the South Atlantic immigration port of entry; has imports greater than those of all ports South, the Chesapeake combined; is the centre of the world's fertilizer industry, having 11 factories at its doors, with an annual output of, approximately, 400,000 tons; has phosphate rock mines yielding 250,000 tons a year; has ten of the most modern lumber plants in the South, having an output of 105,000,000 feet annually; has suburban truck farms yielding nearly 40,000 tons choice vegetables yearly; is the market for the finest grade of sea island cotton in the

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world, raised on its surrounding islands, and is as near the Panama Canal as any other United States port.

Charleston has an average temperature in winter of 51.5, in summer of 80.4, and is an ideal winter resort, while in summer the beaches at Sullivan's Island and the Isle of Palms afford rare attractiveness. So do the beautiful Magnolia Gardens, and the Pinehurst Tea Gardens are not many miles away at Summerville.

The average increase for five years in Charleston's jobbing business is given as follows: Dry goods and notions, 197½ per cent.; shoes, 125 per cent.; drugs and chemicals, 225 per cent.; hats, 125 per cent.; groceries, 32 per cent.; cigars and tobacco, 80 per cent.; clothing, 50 per cent.; mills and machinery, 125 per cent.; hardware, 75 per cent.; rice, 25 per cent.; stationery and bookbinding, 125 per cent.; paints and oils, 100 per cent.; buggies and harness, 50 per cent.; crackers and candy, 75 per cent. Among all the great advantages of Charleston, there is none that is better known or more firmly established than the jobbing business. Her importers and manufacturing agents distribute merchandise to the largest centers of trade, reaching every large city in the United States. Her jobbers have established a predominating influence with the best class of trade in almost every part of North Carolina, South Carolina, Georgia and Florida, which are now commonly known as "Charleston Territory," besides competing successfully in large portions of other States. One of the most satisfactory features of Charleston's jobbing trade is her export sales; her brands and qualities of merchandise entering successfully in competition with all other domestic and foreign merchandise. Charleston houses are selling successfully and shipping from their warehouses merchandise to large trade centers at distances of nearly 5,000 miles.

Charleston leads the world in manufacturing and shipping fertilizers, the total sales of this industry alone reaching the enormous sum of $7,500,000 per annum.

For the manufacture of cotton yarns, bags and bagging, Charleston has three large plants, two of which rank among the largest in the country, employing over 1,000 persons.

The city's miscellaneous manufactures include clothing, pants, shirts, underwear, overalls, oyster and vegetable canneries, cigars, candies, jewelry, carriages, wagons, brick, doors, sash and blinds, pickles and vinegar, plants, mattresses, lead works, baskets, soap, cotton seed products and oils, harness and saddlery, machinery boilers, engines and ship building. There are over 100 of these, employing 5,000 operatives, with a weekly payroll of over $25,000, working to the fullest capacity the year round.

The increase in Charleston's lime and cement business is marvelous. The sales in 1906 were more than all the other South Atlantic ports combined, reaching the enormous sum of over $3,000,000.

Charleston's trucking industry for 1906 showed 24,200 acres planted, with gross profits of $3,717,000, and a cost of production of $2,420,000, leaving as net profits $1,297,000.

Every kind of vegetable is produced in Charleston's trucking territory: Cabbages, potatoes, asparagus, lettuce, snap beans, strawberries, carrots, radishes, cauliflower, onions, tomatoes, cut plants, beets and peas. Fields of two or three hundred acres of cabbages are not uncommon. There is one planter who has 1,000 acres. It is claimed by some statisticians that more packages of vegetables are shipped from Charleston than any other one point in the world.

Charleston's area is 5½ miles; the estimated population on January 1, 1907, was 62,000; the net public debt, $3,788,200; the assessed valuation of all taxable property, $18,450,000, which was estimated at 50 per cent. of the actual value. The tax rate was $2.75. Charleston's last incorporation as a city was 1783. Today Charleston is the seventy-ninth ranking city among the cities of the United States. Charleston's expenditures for general city government expenses amount to $261,630, and for school purposes $202,491. Her fire department is maintained at an expense of about $79,000 annually. She pays out nearly $5,000 per year for maintaining her public parks.

The assessed valuation of property in 1905 was $18,148,515, of which $12,660,545, the per capita total valuation being $322.74. The tax levy for city purposes was $8.45, as low as all but a very few of cities of the same class in America. The city is lighted by 222 electric arc lights and 563 Welsbach gas lights. There are 35 miles of paved streets and 33 miles of unpaved.

Charleston's banking statistics are not available for 1907, but the city is distinctly a banking town, and her banking institutions have furnished capital for many years for the building of railroads, development of mines, building of factories, in all parts of the country. Not counting private bankers, Charleston by 1895 had 18 banks, with a capital of over $10,000,000. Of the present-day

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banking situation these three claims are made: 1, Charleston banks put out in loans and discounts a larger proportion of their resources than the banks of any city in the South, from Baltimore to New Orleans, both included, showing greatest activity; 2, Charleston banking institutions carry a larger amount of capital stock, surplus and deposits than the banks of any of twenty (20) other leading cities of the South; 3, Charleston bank deposits are much larger in proportion to capital and surplus than that of any other city in the South. The most prominent of Charleston's banks and trust companies at this time are the Bank of Charleston, N. B. A., Commercial Savings Bank, Dime Savings Bank, Enterprise Bank, Exchange Banking and Trust Company, First National Bank, Germania Savings Bank, Hibernian Savings and Trust Company, People's National Bank, South Carolina Loan and Trust Company, and the Carolina Savings Bank.

The Southern Fruit Company makes Charleston the port of entry for a line of fruit steamers from South American points, and that city the distributing point to the interior for tropical fruits.

Within the city itself the chief objects of interest to visitors are, first, the colonial church, St. Michael's, standing at the intersection of Meeting and Broad streets, which is intimately connected with all the historical events that have occurred there since its erection a century and a half ago; St. Philip's Church, and the old Huguenot Church. Then the East and South Batteries, and White Point Garden, which border the bay with a row of stately residences; the old Postoffice, once the custom house and Assembly Hall, and where a reception was tendered to President Washington on the occasion of his visit to the city in 1791. In its basement were imprisoned such of the citizens of Charleston as had made themselves objectionable to the British by their patriotism. Not far distant is the old Powder Magazine, also dating back to the early years of the city, and now occupied by the Colonial Dames as their club room. Quite a number of the churches are places of historic interest; and scattered throughout the city are old residences that have become famous for their quaint architecture, colonial furniture and historical associations.

But, as has often been said, Charleston, with all her inate and surrounding attractions, must be seen to be appreciated.

2—Columbia.—As the people advanced into the interior of South Carolina, the demand was made for a centrally located capital city—a point more accessible than Charleston, resulting in the appointment of commissioners to select a proper site for a suitable capital city. In 1786, by an Act of the General Assembly, ratified March 22, commissioners were authorized and required "to lay off a tract of land of two miles square, near Friday's Ferry, on the Congaree River, including the plane or hill whereon Thomas and James Taylor, Esquires, now reside, into lots of half an acre each; and the streets shall be of such dimensions, not less than 60 feet wide, as they shall think convenient and necessary, with two principal streets running through the center of the town, at right angles, of 150 feet wide." These commissioners were authorized, after reserving one or more squares for the accommodation of necessary public buildings, to sell one-fifth of the remainder of the lots. The record of the original sale of lots is preserved and is a most interesting document, showing how some, speculatively inclined, bought lots which, when resurveys were made, turned out to be "in the river."

STATEMENT SHOWING GROWTH OF COLUMBIA AND RICHLAND COUNTY BY INCREASE IN REAL ESTATE VALUES FOR THE PAST FIVE YEARS.

Year.	Columbia.	Columbia Township.	Balance of County.	Total Val. in County.
1902	$4,215,615	$ 944,695	$1,147,170	$6,307,480
1903	4,490,662	848,000	1,140,610	6,479,272
1904	4,462,010	848,193	1,124,010	6,634,213
1905	4,647,322	895,121	1,131,026	6,673,469
1906	5,767,370	1,524,343	1,620,297	8,912,010

It was from this beginning that has grown the present rapidly developing capital city of South Carolina, which has once been destroyed utterly, as a result of war, but has risen from its ashes to a degree of industrial prominence scarcely expected. Today Columbia is a wide-awake, progressive and ever-developing city, destined in the near future, apparently, to be a great distributing commercial center, enjoying water rates. The city had a banking capital of two

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and a quarter millions of dollars when Sherman's army came, and in one night everything constituting her wealth was wiped out, 1,426 buildings, stores and residences being destroyed. For eleven years thereafter Columbia was "the theater of gigantic frauds," and until 1876 struggled under the horrors of Reconstruction. The first great advance was made through the completion of the Columbia Canal, with the development of its water power, and the introduction of transmitted electric power generated by electricity. How this was accomplished cannot be told here. From the day the waters of the Broad River were turned into the completed Columbia Canal the city grew until she is the Columbia of today—a splendid, rapidly developing, commercial center. At no time in two decades has there been a backward step. Herewith are shown views of the capital city just after the destruction of the city, and by way of contrast a view of today of the street looking north from the capitol. The first effort to open the Columbia Canal was made by the General Assembly in 1868, when the State transferred the property to Gov. Wm. Sprague, of Rhode Island, who spent about $100,000 in its improvement. The panic of 1873 came, and Sullivan Turner, his assignee, returned the property to the State, with a reservation of 500 horse power upon the completion of the canal. In 1888 the project was revived and finally completed by the city of Columbia.

STATEMENT SHOWING THE GROWTH OF RICHLAND COUNTY BY INCREASE IN PERSONAL PROPERTY AND RAILROAD PROPERTY FOR THE PAST SIX YEARS.

Year.	Personal Property.	Railroad Property.	Total Taxable Value in County.
1902	$3,879,996	$1,484,950	$11,672,426
1903	4,749,212	1,481,859	12,710,343
1904	4,352,974	1,628,976	12,616,163
1905	5,249,824	1,566,305	13,489,798
1906	5,249,824	1,692,925	15,854,759
1907	.....	.....	16,844,705

The increase in real estate values in Columbia for the period covered was 36.8 per cent.; Columbia township, 61.4 per cent.; balance of the county, 42.1 per cent. Total increase, 41.1 per cent. The increase in personal property in the whole county was 35.5 per cent., and increase in railroad assessment was 14 per cent. The increase in all taxable values during the six years was 46.3 per cent., or $5,172,279.

So much for the origin of Columbia's movement looking to the development of the city as an industrial and commercial center. Columbia's importance at this time as a manufacturing city is shown by the figures given elsewhere in this volume. Her population figures by the United States census, given at the opening of this chapter, apply strictly to the two-mile square city limits; figures herewith given by the Chamber of Commerce are computed upon the basis of including the suburban communities, wherein at present a large portion of the present population reside. These last figures estimate the population and suburbs of Columbia at 45,000.

The following is the 1907 summary, with comparisons for 1890 and 1900, furnished by the Chamber of Commerce, covering most of the essentials upon which the seeker for information wishes enlightenment: Population—1890, 15,000; 1900, 27,000; 1907, 45,000. Actual value of property—1907, $37,130,000. Public buildings not included—1907, $7,325,000. Tax values on 40 per cent. basis—1907, $16,972,014. City licenses—1900, $24,920.50; 1907, $36,088. City water used per day—1890, 1,844,000 gallons; 1900, 1,950,000 gallons; 1907, 2,225,000 gallons. City sewerage—1907, 32 miles. Water mains—1890, 19.82 miles; 1900, 21.82 miles; 1907, 32 miles. City resources over liabilities—1907, $1,366,010. Bank capital, city—1890, $634,724; 1900, $789,536; 1907, $1,721,106. Bank deposits—1890, $1,215,910; 1900, $2,663,143; 1907, $5,426,491. Number of railroads—1890, 6; 1900, 8; 1907, 8. Number passenger trains per day—1907, 56. Number freight trains per day—1907, 60. Invested in cotton mills—1900, $3,879,429; 1907, $4,775,000. Cotton spindles—1890, 35,000; 1900, 105,000; 1907, 238,000. Cotton looms—1890, 500; 1900, 2,500; 1907, 5,592. Cotton sold at Columbia—1890, 15,000 bales; 1900, 25,000 bales; 1907, 35,000 bales. Cotton consumed—1890, 10,000 bales; 1900, 26,250 bales; 1907, 60,000 bales. Value cotton mill products—1900, $3,133,903; 1907, $4,676,944. Newspaper postage—1890, $300; 1900, $2,600; 1907, $9,000. Invested in fertilizer plants—1890, $50,000; 1900, $150,000; 1907, $400,000. Tons fertilizer manufactured—1890, 15,000 tons; 1906, 35,000 tons; 1907, 70,000 tons.

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Columbia presents most favorable conditions and opportunities for the establishment of large and small industrial enterprises. There are now within the city limits cotton factories run by electricity, generated by the power gathered from the Congaree River.

The roads of Richland County around Columbia are in good shape. There are 400 miles of roads, all of which have been graded. The county owns a full outfit of road-building machinery and is making good headway in bringing all the roads up to a high grade of utility. The county chain gang is used for this purpose.

The total indebtedness of the municipality is $1,325,548, and the resources are $2,691,558, the net resources being $1,366,010.

The value of the school property in Columbia, including the State and denominational colleges, is placed at $1,620,000.

One of the prime advantages of this city, from a commercial and industrial standpoint, is its transportation facilities. The city has eleven lines of railroad radiating in as many different directions. The Seaboard has a direct line to Richmond and the North, and to Jacksonville and Tampa on the South. The Southern has a line to Charlotte and Washington, one to Savannah and Florida



MAIN STREET IN COLUMBIA, LOOKING NORTH FROM CAPITOL GROUNDS—1907.

points, one to Augusta, one to Asheville, one to Greenville and one to Charleston. The Atlantic Coast Line has a direct line to Washington and another to Charleston, while the Columbia, Newberry and Laurens has a hundred mile line running due north to Greenville. Columbia is situated very near the center of the State and is one of the most advantageous distributing points in the entire South.

The opening of the Congaree River to navigation by the Government has given the city water transportation.

The Columbia postoffice's total income for the year ending June 30, 1907, was $86,240.77, and $342,043.65 was transmitted by money orders through the office. The Columbia office is the depository for 805 other postoffices. The income of the office was 139.7 per cent. greater than the expenses of operation. In 1902 the receipts of the office were only $46,843.53.

Columbia in 1907 had six banks with a capital of $1,100,000, against $426,800 in 1890, and $600,000 in 1900. The deposits increased from $1,215,910.56 in 1890 to $2,605,557.92 in 1900, and to $5,103,008.76 in 1907. The undivided profits and

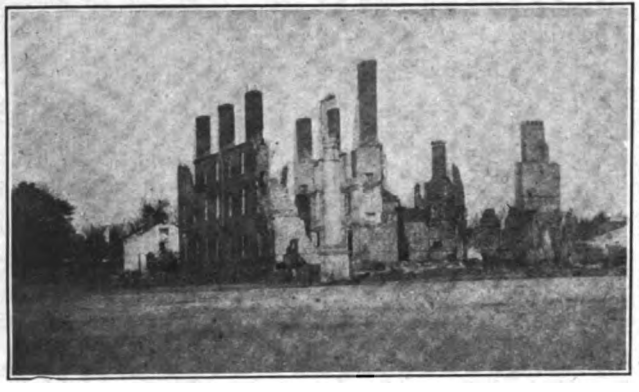
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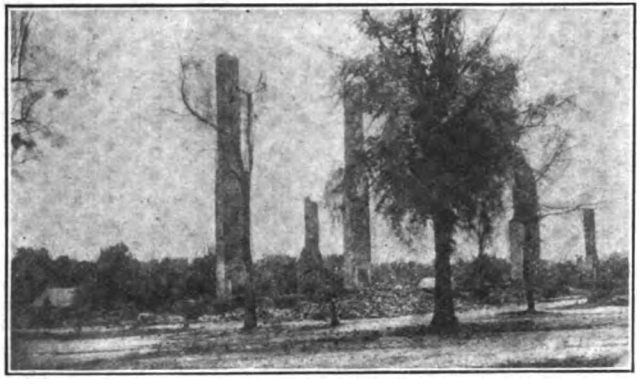
MAIN STREET LOOKING SOUTH, SHOWING STATE HOUSE PARTIALLY COMPLETED—1865



MAIN STREET, LOOKING NORTH FROM STATE CAPITOL GROUNDS—1865.



CATHOLIC CONVENT—1865.



HUNT'S HOTEL, MAIN STREET—1865.

REPRODUCTIONS OF RARE PHOTOGRAPHS SHOWING SCENES IN THE CAPITAL CITY AFTER THE PASSING OF SHERMAN'S ARMY.

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surplus were $207,934.84 in 1890, $189,536.91 in 1900, and $507,196.63 in 1907. There were four banks in 1890, six in 1900, and the same number in 1907.

The city has a new water works plant worth $686,974 actually.

The sewer system of Columbia embraces 34 miles of mains and laterals from 8 inches to 24 inches in size. These sewers are flushed automatically by 131 flush tanks, which discharge 500 gallons of water each once every 12 hours. The system has been in operation five years; 1,300 houses have been connected. The system is sufficient to serve a much larger population. The cost of the system up to date is $125,000.

The Columbia fire department costs in salaries to firemen $25,000 per annum; there are three stations, two of which are owned by the city and are worth $25,000. The city is two miles square, with several thickly populated suburbs, to which the department also extends protection. The number of alarms reaches 125 per year, and the fire loss will average 10 per cent. of the total value of the property. The rates of insurance for the city are as cheap as in any city of the same size in the South.

The Columbia police department pays $32,186 per year in salaries.

Columbia has 83 miles of streets, of which 12 miles are macadamized. The streets of the city proper are 100 feet wide, with the exception of three of them, which are 150 feet wide. Plans are now being worked out to pave with some first-class material all the principal streets in the city.

The climate of Columbia is mild and pleasant. The winter temperature will average 47.2 degrees; spring, 63.4 degrees; summer, 79.4 degrees, and fall, 63.9 degrees.

The United States Government has recently made an appropriation of $150,000 for the deepening of the channel of the Congaree River from Columbia to the Atlantic Ocean at Georgetown. The New York, Columbia and Georgetown Steamship Company is now operating a line of boats between Columbia and Georgetown, and with the deepening of the channel there will be several more boats added to the line. The channel will be made for a four-feet draft, large warehouses will be erected at Columbia, and the river traffic promises to be one of the city's chief transportation features.

Among the cotton mills of Columbia is the Olympia, the largest cotton mill under one roof in the world. This mill has ten acres of floor space and operates 100,000 spindles and 2,250 looms. Two hosiery mills, consuming 1,000 bales of cotton annually. Among the diversified manufacturing plants may be named: A modern glass factory employing 240 men and manufacturing an annual output worth $220,000; a distillery, capitalized at $100,000; six lumber manufacturing plants with an estimated output of a half million dollars. Three fertilizer factories with an annual output of $900,000; three cotton oil mills with an annual output of over $1,000,000; four large foundries and machine shops; one mattress factory; one cotton compress; three large bonded warehouses of the Standard Warehouse Company with a storage capacity of 60,000 bales; four extensive rock quarries; three large brick manufacturing plants; two thoroughly large modern ice manufacturing plants; one press cloth factory; one soap factory; one carriage factory; one modernly equipped factory for the manufacture of aseptic gauzes and chemicals; a large and modern gas works; one paint factory; one shirt factory; one large Coca-Cola plant; several mineral spring and bottling plants; two cattle yards; several large cattle and poultry farms; two well-equipped and prosperous green houses; one large electric power station (water), developing at full capacity 12,000 horse power, current sold and transmitted to any point; one large electric power station, steam driven, developing 6,000 horse power; two daily newspapers, morning and afternoon, respectively; three large printing and bookbinding plants.

3—Greenville.—The following facts as to the city of Greenville, which in 1907 is through its Board of Trade claiming a population in city and suburbs of 30,000, are furnished by the Board of Trade:

Greenville is situated at the foot of the mountains, in the Piedmont section of South Carolina, and has an elevation of 1,040 feet. Temperature—highest, 97; lowest, 14. Deaths, 1906, less than 6 per 1,000 of population. Malaria and fevers infrequent. Water from the mountains, pure.

Railroads—main line Southern Railway, Washington to Atlanta; terminus Southern Railway, Columbia to Greenville, and direct line from Charleston and Florida; Charleston and Western Carolina, Greenville to Augusta, Ga., and the coast, admitting Seaboard Air Line and Atlantic Coast Line Railways; Greenville and Knoxville, now building, 12 miles operating towards mountains of Western North Carolina; electric line building from Anderson, with line to Belton now open; line proposed, Knoxville to Greenville via Waynesville, N. C., and practically assured; line proposed, Greenwood to Greenville.

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Value of real estate, city, 1900, $1,560,225; 1906, $2,414,310; increase, 54.75 per cent. City and county, 1900, $4,245,615; 1906, $6,361,830; increase, 49.84 per cent. Total taxable property, city and county, 1900 $7,177,555; 1906, $11,918,570; increase, 66.05 per cent.

Freight, in and out, year ending December 1, 1906, 17,149 solid cars. Increase over former year, more than 20 per cent.

Payrolls, industrial, 1906, $2,250,000.

Postoffice receipts, 1901, $18,000; 1906-7, $41,000. Office now in first class with Columbia and Charleston; $80,000 appropriated for enlargement of postoffice and United States court building.

Hotel—Greenville Hotel Company organized to erect modern hotel at cost of $125,000; site purchased; plans drawn.

Cotton mills, ten in number, represent about $6,000,000 investment; $14,000,000 invested within radius of 20 miles. Cotton mill wages in city, 1906, over $1,000,000. Mills of Greenville County, 1906, consumed about 67,000 bales of raw cotton. County's cotton and cotton products valued at $4,600,000; increase about 400 per cent. in 20 years. One Greenville mill manufacturing blankets. Greenville has one of the few bleacheries and finishing plants of the South.

The banks show combined capital, surplus and undivided profits approximating $982,000; individual deposits, $2,115,571. New bank recently organized brings capital, etc., to $1,000,000 and individual deposits to $2,225,000.

Municipal figures show value of building permits to approximate $500,000. In 1906, 27,360 feet of sewerage were completed; 11.5 miles of cement sidewalks constructed; 26,500 square yards of macadam laid; 30,000 feet standard curbing placed.

The industries include American Cigar Factory with capacity for 1,000 employes; flour mills, foundries, woodworking, wagon factories, steam laundries, marble works, wholesale houses, supply houses, etc., etc.

Among the schools are numbered Furman University and Furman Fitting School for boys; Chicora College for girls; Greenville Female College; South Carolina Conservatory of Music; Business College; splendidly equipped public schools with enrolment of about 2,800 pupils; Sacred Heart Academy (Roman Catholic); Greenville College for Women.

4—Spartanburg.—The Chamber of Commerce reports as follows:

Spartanburg has a population of more than 18,000 within the city limits, there being nearly as many more located in the mill villages within a few miles of the city. Spartanburg has more than tripled its population within the last fifteen years. City property has an assessed valuation of $5,451,932. The city is located in the Piedmont section of South Carolina, 25 miles from the Blue Ridge Mountains, 816 feet above the sea level. The climate is mild. The health record of Spartanburg is unexcelled by any city in the South. The city has an unsurpassed water supply and first-class electric street car line, which extends many miles into the county, connecting the mill villages with the city. The city is well lighted with electricity and gas.

Spartanburg is on the main line of the Southern Railway between Washington and Atlanta. The Southern's line from the sea at Charleston to the West via Cincinnati also passes through Spartanburg. The city is also the terminus of the Charleston and Western Carolina Railroad.

Spartanburg is the "educational center of South Carolina." Here are located two of the finest colleges in the South—Wofford for men, and Converse for young ladies—also "finest public school system in the State." There are 22 churches in the city.

Spartanburg, through its city government, has spent during the last ten years more than $300,000 in permanent street improvement, and now has the finest paved streets of any city in the South.

Spartanburg County is "the greatest manufacturing county in the South." There are in the county 37 cotton mills, which consume annually over 250,000 bales of cotton. In these mills there are 671,941 spindles and over 19,000 looms. The cotton mills have increased the annual income of Spartanburg to the extent of $23,750,000.

Spartanburg has within the city 10 banks and trust companies with an aggregate capital of $859,300. These institutions have a surplus of $352,745. The manufacturing companies and the banks distribute in Spartanburg semi-annually more than $600,000 in dividends.

Spartanburg County has the largest white population of any county in South Carolina, and is the second wealthiest county in the State. The assessed value of the property in the county is $16,265,887. The city of Spartanburg is backed up by the finest farming lands in the State, the county producing annually more than 50,000 bales of cotton, most of which is consumed by the Spartanburg mills.

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Spartanburg has, in addition to numerous small enterprises, two ironworking establishments, three guano factories, reed loom and harness works, top roller cover factory, cross-arm pin and bracket factory, broom factory and ice plant.

Spartanburg is one of the chief wholesale points of the Piedmont section of the State. There are a number of strong wholesale firms located in the city handling groceries, hardware, dry goods, drugs, fruits and vegetables.

Spartanburg is the home of the South Atlantic States Musical Festival, one of the greatest attractions of its kind in the South. This festival brings annually to Spartanburg the greatest musicians in the country and a large and cultured audience.

Spartanburg offers an attractive field for all classes of investments. Spartanburg is no "one-industry" city, there being a variety of enterprises upon which the city bases its prosperity. Prosperity is general and is enjoyed by all classes.

5—Newberry.—Newberry's population now exceeds 7,000, and her citizens are a thrifty, energetic and law-abiding people. The city owns its water works and its fine electric light plant and sewerage system. The Coast Line and Southern railroads offer quick transportation to all points.

Newberry, the county-seat of Newberry County, is situated in one of the most beautiful and fertile sections of the State, the famed Piedmont section, of which so much has been written. Newberry is forty-three miles from Columbia, in the historic Piedmont section and the center of the most beautiful part of the State.

Few places enjoy the many advantages vouchsafed to Newberry. One of these advantages is the excellence and extent of her water supply, having the best artesian water in the State—two wells, 12 feet apart, 300 feet deep, and the water forced out by air compressor. The wells, with the exception of the first 40 feet, are drilled through solid granite rock. The water evidently comes from a subterranean lake or river. The second well was drilled to give additional outlet, and not on account of any scarcity of water.

Newberry is well suplied with religious and educational facilities, with various fraternal and charitable organizations, and staunch financial institutions. Her manufacturing industries and commercial and trade enterprises are thrifty, of large average proportions, and of a universally high grade of excellence, including two large cotton mills, four banks, two planing mills, two knitting mills, a $25,000 city hall and opera house, and money in hand for a $40,000 court house, which will be built as soon as the plans of the architects are ready.

Newberry is situated on a slight elevation, giving the best surface drainage; has a remarkably equable and healthy climate, and is free from epidemics. Its splendid transportation facilities, its proximity to the markets, its large tributary population, its water and fuel supply, climate and general healthfulness—all forceful and convincing facts—contribute to its advantageous location. Higher valuations in the larger cities will necessarily cause many manufacturers to seek new quarters. Strictly on merit and natural advantages, Newberry should secure enough of these to more than double her present population in a few years. The census of 1900 gave Newberry a population of 4,067. It is believed that there are now more than 7,000 people within her borders, and with her gates open and new people coming in, the growth is very noticeable.

No area in the United States is better adapted to the growth of garden "truck" than that which surrounds Newberry. The cotton production is deserving of special mention. In the county an average of nearly 40,000 bales of cotton are grown every year, yielding to the producers a large revenue. The number of bales produced in the county in 1905, according to the Department of Agriculture, was 39,453, averaging 500 pounds. In the early spring, strawberries, beans, tomatoes, corn, etc., are raised and find a ready market. Thousands of acres of good improved land are still for sale in territory surrounding at fair prices. As population increases these lands will steadily enhance in value, and those purchasing now will reap the benefit of this increase.

An evidence of the growth of Newberry in the past few years is found in the receipts of the postoffice, which were, for the fiscal year ending March 31, 1903, $7,274.46, and for March 31, 1906, $9,192.35, showing an increase of 25 per cent. in three years. More money orders were issued at this office in 1905 than a good many cities of larger population—7,600.

Newberry is a city of churches and Newberrians are a church-going people.

The city has a thorough system of graded schools, with free tuition for all children. An institution of Newberry in which all citizens take a just pride is Newberry College, which is treated elsewhere.

To give some idea of the business prosperity of Newberry, it may be mentioned that within the past six months thirteen new brick stores have been built in the town.

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Newberry has two of the finest cotton mills in the South. The Newberry Mill was established over 20 years ago—in 1884. There are men and women with the mill who have been with it all the time—young people who have grown up there; among these being the efficient superintendent—showing that the operatives have found it a good place. The Mollohon Mill was established in 1901 and was enlarged in 1904.

The banks are among the soundest and most prosperous institutions of Newberry. The oldest bank is the National Bank of Newberry, an honored and safe institution that was founded in 1871. It has a capital stock of $150,000 and a large surplus fund. The total deposits in the four banks of the city of Newberry are close to a million dollars.

6—Sumter.—The city of Sumter, situated in the center of one of the richest agricultural sections of South Carolina, geographically located as to be one of the most important railroads centers of the South, with eight lines of railroad controlled by three separate systems of railway companies, the Atlantic Coast Line, the Northwestern, and the Southern Railway, which guarantees competitive freight rates, and with 46 trains a day, passenger and freight, running into the city from all points of the compass, and these transportation lines, like the spokes of a great commercial wheel, connecting, as it were, with Sumter, the "Hub" of the great Pee Dee section, and all Eastern Carolina, these unusual fine transportation facilities make this city one of the best distributing points for wholesale, jobbing and manufacturing establishments in this section of the great South.

Sumter enjoys a retail trade with the ten or twelve counties in the retail and wholesale lines and in her manufacturing industries with the entire United States and with many foreign countries, which will aggregate at least $15,000,000 annually.

This great business, wholesale, retail and manufacturing, is increasing year by year, and Sumter's wide-awake business men are constantly reaching out for new trade territory and new business.

The manufacturing establishments are increasing their business and are almost every year adding to the capacity of their plants.

New manufacturing plants are being established each year. Sumter is fast getting to be an important wholesale center, and in the retail line, in all classes of business, her merchants are up-to-date and successful.

One of the chief reasons for Sumter's growth is her splendid health record, and her fortunate possession of one of the most abundant supplies of absolutely pure drinking water. The death rate among the white people will not exceed one per cent.

Sumter's climate is excellent. In winter it is seldom ever so cold that outdoor pursuits and sports cannot be carried on. In the summer months it is seldom that the weather is so warm as to be very disagreeable, and the nights and mornings are cool, affording refreshing rest and sleep.

The increase in tax values in Sumter have been very gratifying, showing a healthy growth. The increase in 1906 over 1905 was $507,000, as follows:

Total tax returns for 1906	$2,500,000
Total tax returns for 1905	1,993,000
Increase	$ 507,000

As property is not returned for taxes at quite one-half of its value, conservative expert authorities estimate that the actual increase in real estate and personal property was $1,014,000 in one year. In 1904 the total tax values were $1,806,000, making a total increase in three years of $694,000, or on a basis of 50 per cent. valuation for taxes, the actual increase since 1904 was $1,388,000.

City Clerk C. M. Hurst, who is a very conservative estimater, says that the total value of real and personal property in Sumter of a taxable nature is not less than $5,000,000.

June 30, 1897, the postoffice receipts were for the fiscal year ending on that date $7,446; June 30, 1907, the postal receipts were $21,064—nearly three times as much in 10 years. June 30, 1902, the postal receipts were $10,778; June 30, 1907, $21,064—nearly doubled in five years.

At this rate of increase, Sumter will, within the next five or six years, have a revenue of $40,000 and will be a first class postoffice.

During one year in Sumter the banks did a tremendous business. In 1905, according to the statements of the cashiers of the then three banks, as against four at present, the total amount of money passing through those banks for that

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year, including deposits, exchange, discounts, withdrawals, checks and all money handled, was $50,630,382.06.

There must be more money handled at this time, as the city has greatly increased its business and its money circulation since then.

Population more than doubled in seven years:

Population in 1900, United States census	5,675
Population in 1903, city census	7,281
Population in 1905, house enumeration	10,316
Population in 1907, between 13,000 and	14,000

Sumter is getting to be a city of diversified manufacturing. Take, for instance, the iron and brass business, and casket and coffin box factories, and jobbers of undertakers' supplies, one large cotton seed oil and cotton seed mill, one shoe factory, two large bottling works for soft drinks and one whiskey and one beer bottling plant, three large ice plants, two large sash, door and blind builders' supply factories and woodworking establishments, three up-to-date and well-equipped job working establishments, one smoothing iron heater factory, one cotton yarn mill, five large saw mill and lumber companies, besides two large lumber agencies, two marble and stone works, two or three automobile garages and repair shops, several automobile agencies, one large and up-to-date brick factory, one wholesale hardware and railway mill and supply company, one artificial stone works, besides smaller industries such as wheelwright and iron-working establishments, where log carts are manufactured and repairs and various vehicles and machinery are made, one hospital for animals, one wheat and several corn mills, several plumbing and steam-fitting shops, one electric light and power furnishing plant, and other industries.

Numerous manufactured articles besides those enumerated above are made in Sumter, such as window and door screens, desks, cabinets, turned woodwork of many kinds, window and door frames, columns, scroll work, mantles, counters, office railings and store fixtures, tables, mouldings, electric light and telephone line cross-arms and various kinds of woodwork are manufactured.

Sumter is one of the most important railroad points between Baltimore and Columbia. The total receipts of freight depots at Sumter for incoming and outgoing freight averages between $500,000 and $600,000, and including freight charges on carload lots, freight prepaid at points of shipment and freights paid at destination, average about $700,000 annually. The passenger business will average $200,000 annually.

There are between 50,000 and 60,000 bales of cotton shipped from Sumter annually. There are now nearly $400,000 worth of cotton stored in the Sumter cotton warehouses, Sumter having a cotton compress and numbers of local and export cotton buyers, with plenty of competition and with a chamber of commerce to see that market prices are maintained or to find out the reason why this market has been one of the best in the State.

Sumter is the home of the Sumter Telephone Manufacturing Company, and has a fine wholesale business and good educational advantages.

7—Orangeburg.—This progressive agricultural market center is situated in the very center of Orangeburg County, which is one of the largest of the cotton producing counties of the State, on the eastern side of the Edisto River, 81 miles from Charleston and 52 miles from Columbia. It is situated 259 feet above the sea level. The first settlement of the county was in 1735 by Germans. The population in 1866 was 900; in 1900 it was 4,455, in 1904 (by city census), 6,000, and at present the Business Men's League and City Directory places the figures at 7,500. The county has $9,618,070 of taxable property, and the city $1,516,990. There are five banks, with $215,000 capital, $170,000 surplus and undivided profits and $975,000 deposits. One of these banks is small and is run by negroes. There are three graded schools and four colleges. The postal receipts in 1901 were $7,765, against $12,104 in 1907. The cotton manufacturing industry is shown in another chapter. Value of annual products of finished lumber products in 1907, $150,000; oil mill products, $100,000; ice plant products, $10,000; drugs and medicines, value of products, $10,000. The total value of all the manufactured products of the city is $1,973,200. The cotton receipts of the city amount annually to 20,000 bales, of an approximate value of $1,000,000. If river navigation were opened most of this cotton would find its way to Charleston for export. There are large quantities of fertilizer material brought from Charleston and the Business Men's League has announced its intention of putting a boat into service on the Edisto as soon as the Federal Government works sufficiently on the river to make it navigable. Orangeburg has both the Southern Railway and Atlantic Coast Line Railroads, affording rail transportation in every direction.

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The four colleges, two of which are negro, have an enrolment of 1,700, and there are 950 pupils in the graded schools. The city is lighted by electricty, has a complete waterworks plant and a $50,000 sewerage system. Arrangements are already being made to pave the principal business street with vitrified brick. The business people of Orangeburg confidently express the belief that in the next decade Orangeburg will have a population of from 18,000 to 20,000, if the present rate of increase is maintained. Orangeburg is a thoroughly progressive town and the development upon all lines is gratifying.

8—Rock Hill, for which a population of 12,000 is claimed by the commercial organization at this time, is one of the most progressive places in the upper portion of the State; has as its chief development tributary to that town an electric power plant costing $1,100,000, with capacity of 15,000 horse power; power furnished day and night, in any quantity, for machinery, with increasing production and lowering payrolls, at a cost of less than freight on coal. The Winthrop Normal and Industrial College, with State farm of 144 acres, is at Rock Hill, with an enrolment of about 600 girls. The buildings cost over $500,000. A Carnegie library has been erected. The Rock Hill Buggy Company, with a capital of $250,000 and a capacity of 10,000 jobs per year, and shipments to every Southern State and to South Africa and New Zealand, is there. Rock Hill has five cotton mills, with over $1,500,000 capital, an oil mill, several ginneries; there are about 55,000 spindles, 2,100 looms and 1,500 operatives. The payroll per month is about $21,000, normally. Many improvements recently added to enable larger output.

The power, light and water company has seven miles of mains, a reservoir with a capacity of 180,000 gallons; standpipe, 150,000 gallons; artesian well, 200,000 gallons; analyzed, pure; pressure, 125 to 150 pounds.

There are four banks, with a combined capital of $250,000.

A military academy trains students for universities.

The Syleecau Manufacturing Company, woodworking and lumber, with foundry, has a capital of $10,000.

A private hospital, costing $10,000; 15 beds; trained nurses; is attended by New York and local physicians.

The graded schools have splendid equipment. Recent improvements cost $6,000.

Other features of Rock Hill's possessions are the following: Street railway, electric flour mill, machine shops, wagon works, steam laundry, bottling works, brick plant, two iron foundries, three newspapers, three printing plants, four livery and sales stables, wholesale drug stores, as handsome retail stores as may be found in the State, churches of all leading denominations; the Rock Hill Marble and Stone Company, newly established.

Rock Hill is on the Southern Railway, on main lines running east and west and north and south. Twelve hours from Washington. Connections with Atlantic Coast Line and Seaboard Air Line.

Rock Hill has an elevation of 700 feet and an unsurpassed health record. Splendid streets. Government building and municipal hall and fire department building now being erected.

A suspender factory has just started. The Harriss Manufacturing Company is completing a plant for the purpose of manufacturing daily about 200,000 pounds of coarse yarns. One of the features of this plant will be the special manufacture of cotton collar pads.

When incorporated in 1870, Rock Hill's population was 273. In 1880 the increase was to 809. In 1890 it was 2,781, and now it is 9,000.

Rock Hill is situated in York County, in the northern part of the State, 84 miles from Columbia, the capital, and 25 miles from Charlotte, the metropolis of North Carolina. The city is 668 feet above tidewater, and possesses excellent railroad advantages.

Rock Hill's corporate existence dates from 1870 only, and it was not until 1892 that the full charter was granted by the State Legislature.

9—Chester.—The following epitome of facts about Chester is furnished by the Chamber of Commerce of that growing and progressive town:

1. In the Piedmont region, at an elevation of 535 feet above the sea level, with good water, fine natural drainage and delightful climate.

2. Good railroad facilities. Trunk line of Southern, trunk line of Seaboard, terminal of Carolina and Northwestern, and terminal of Lancaster and Chester. Fine macadam roads leading to all parts of the county.

3. Splendid farming country; 25,000 bales of cotton weighing 500 pounds each, and bringing from 12 to 15 cents per pound, marketed each year on the streets. Corn, oats, wheat, rye, alfalfa, clover, watermelons, all kinds of berries,

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peaches, apples, pears, plums of every variety, cabbage, beans, peas, potatoes, squashes, cucumbers, and all other kinds of truck, grapes and many other crops, grow here and yield profitable returns under proper cultivation.

4. Southern Power Company now developing 80,000 horse power plant at Great Falls, on Catawba River, about 20 miles from city, in eastern portion of county. Line being constructed to this city to furnish power here. This, with railroad facilities, makes fine field for manufacturing plants.

5. Educational facilities all that could be desired. Two new school houses for whites; 15 teachers and 10 grades. Graduate from Chester graded school can enter sophomore class at any college in the State. Eight white churches and a number of colored. All strangers are looked after and given a cordial welcome to any church in the city.

6. City has all kinds of business houses, both wholesale and retail. Four banks, with aggregate capital and surplus of $300,000, and aggregate deposits of $1,000,000. Two very successful building and loan associations, railroad shops, steam laundry, sash, door and blind factory, iron foundry, ice factory, overall factory, four bottling works, flour mill, corn mill, oil mill, ginneries, tin shop, three cotton mills, and numbers of other minor industries. Another cotton mill in the county.

7. Population: In 1890, 2,703; in 1900, 4,075; and in 1907, 8,000. Population of suburbs and of two cotton mill settlements outside of city limits, 2,000, making a total of 10,000 souls.

8. Assessed valuation of city property, $1,500,000, on 60 per cent. basis. Assessed valuation of county property, $6,000,000.

9. Splendid health. All modern conveniences such as water works, electric lights and sewerage, under municipal ownership and control, paved sidewalks, macadam streets, city park, fair grounds, baseball diamond, public library, good wages in all lines of business, reasonable board, inexpensive living, and free and liberal-hearted people.

10. Free city delivery of mails, six rural deliveries to all parts of county, forty-six mails handled by postoffice daily, government appropriation of $50,000 for a government building, which will be a model of convenience and comfort.

10—Greenwood.—Up to October 1, 1907, the following statistics of Greenwood and of that county in comparison had been compiled. Population of Greenwood city, census, United States, 1900, 4,824; population of Greenwood County, census, United States, 1900, 28,000; area of Greenwood County, square miles, 527; estimated population now of city, 7,000; estimated population now of county, 35,000; total number of acres of land in county, 319,000; total taxable valuation of same, $1,645,075; commercial value of same today not less than $3,000,000; total taxable values of land, city and county, $2,964,070; commercial value of land, city and county, at least $5,000,000; total valuation of all taxable property, 1907, $6,207,880. This shows increase over year 1906 of $470,205. Year 1906 showed increase of nearly $500,000 over 1905; which shows total increase of all taxable property both real and personal of nearly one million dollars in two years.

Cotton—Total number of bales produced in county, 29,000; total number of bales marketed at Greenwood city, 23,000; total number of bales consumed here in county in mills, 37,000; estimated value of county's crop, $1,320,000. In addition to cotton, county raises fine corn and grain crops.

Cotton Seed Manufacturing—Three cotton seed oil mills in county. One at Greenwood city, owned by Southern Cotton Oil Company, a large plant. Commercial value of cotton seed oil and other products is great.

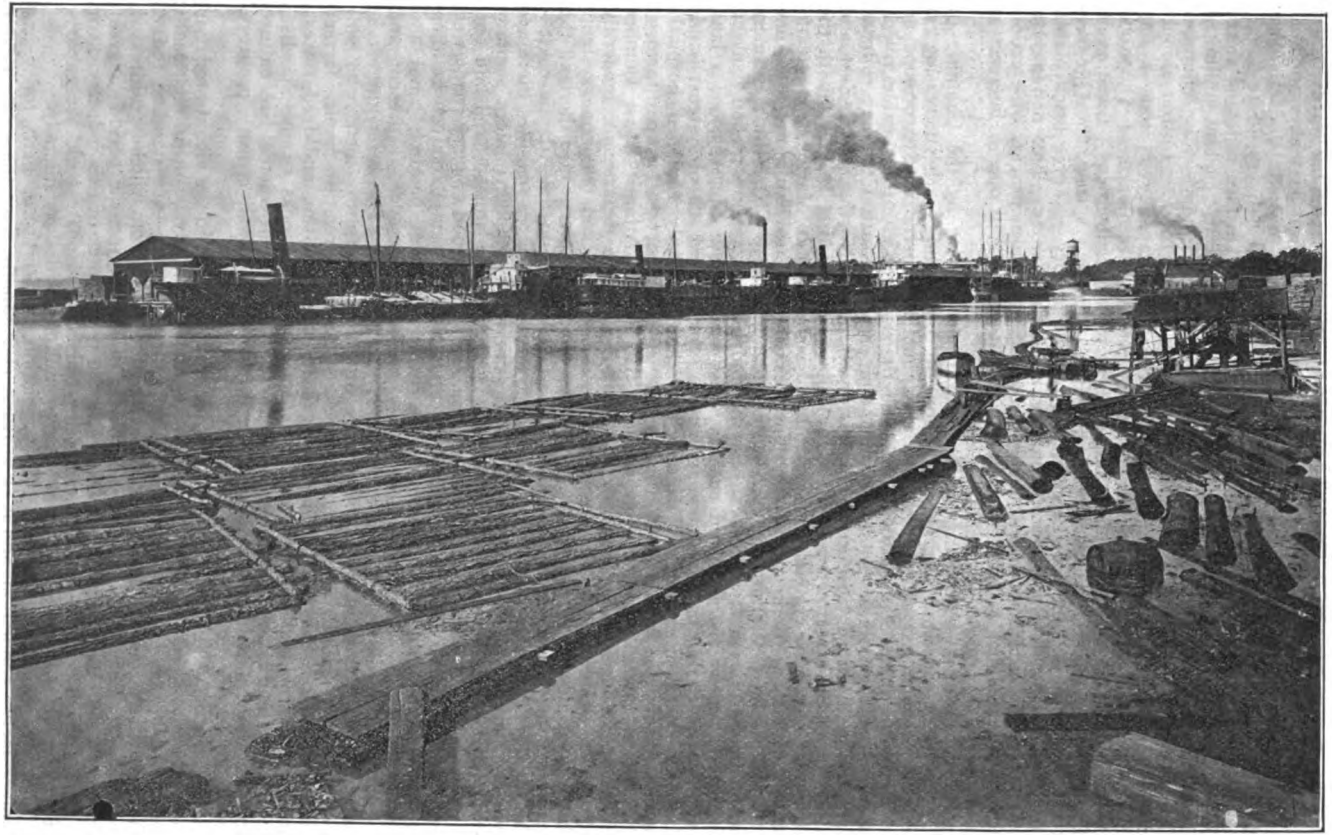
Cotton Mills—Total number of spindles operating in city, 53,096; total number of spindles operating in county, 72,608; total spindles in city and county, 125,704; total spindles in radius of 30 miles, 220,379; total here and in county and in 30-mile radius, 326,183.

Solid Car Business—Greenwood has three railroads—Southern, Seaboard and C. & W. C.—operated by Atlantic Coast Line. These three average 280 solid cars into and out of Greenwood alone per month.

Coal Consumption—Private consumption in city, dealers' figures, 4,000 tons; cotton mill consumption, city, 14,040 tons; estimated consumption in county, mills, etc., 7,800 tons; total, 25,840 tons. Estimated consumption in 30-mile radius, 54,000 tons; total, 79,840 tons.

Banks and Banking—Capital of three banks in city, $250,000; surplus of these three banks, $158,320; capital and surplus of the three, $408,320. Capital of banks out in county, $138,280; surplus of banks out in county, $28,009; total capital and surplus in county, $160,289. Total banking capital and surplus of city and county, $568,609. Total deposits in city, October 1, 1907, $745,000; total deposits in county, $260,000; total deposits city and county, October 1, 1907, $1,005,000.

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SHIPPING LUMBER AT THE PORT OF GEORGETOWN.

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Other Enterprises in Greenwood City—Largest cotton ginnery east of Mississippi River; capacity, 160 bales a day. Ice factory, 25 tons capacity. Two lumber manufacturing companies, sash, doors and blinds. Three lumber yards, rough lumber. Three bottling concerns, good shippers. Eighteen passenger and mail trains each day. Location of Lander Female College, owned by Methodists. Fine graded school, with enrollment of 820. Free postal delivery. Site bought by United States Government for a $60,000 building. Thirteen miles of sewer. Electric light and water plant, owned by city. All day electric current, unlimited, from Savannah River Power Company. One steam laundry. Five churches. Two big cotton warehouses, combined capacity, 12,000 bales. Cotton shipped from large radius for storage. Fertilizer factory, capacity 25 tons a day. Four wholesale grocers, two having annual business combined of $1,000,000. Two wholesale fruit companies; ship largely to adjacent towns. Location of Baptist State Orphanage, 250 inmates. Fine telephone system, local; covers town and county. One handkerchief and overall factory. Three brick plants, one operated by electricity. Iron foundry, marble yards, etc. Two newspapers, secular, one religious. Masonic Temple, costing $30,000, in process of erection. Railroad to Saluda, 29 miles long, is being built now. Will open a fine section of country.

11—Georgetown.—According to facts furnished in 1907 by the Chamber of Commerce, Georgetown has a population of 6,000, and yearly increasing; a suburban population of about 2,500; an annual commerce of $10,000,000; an annual port tonnage of 500,000 tons; one thousand miles of navigable rivers, watering nearly half of South Carolina and part of North Carolina; railroad facilities that afford close connection with all points North, South, East and West, via the Georgetown and Western Railroad, connecting at Lanes with the Atlantic Coast Line system; another railroad being built to Marion; two steamship lines to New York and Boston; one steamship line to Baltimore, Md.; one steamship line to Wilmington, N. C.; one steamer line to Charleston; steamers on all tributary rivers; four local building and loan associations; good banking facilities; a new postoffice and custom house building, costing $65,000; a land association, offering city lots on easy terms; a fine graded school system; handsome churches of nearly all denominations; a modernly equipped hospital; machine shops and foundries; bottling works; an ice factory; a boat oar factory; the largest sawmill plant in this country, that of the Atlantic Coast Lumber Company, besides other large sawmill plants; good fire department, modernly equipped; Gamewell fire alarm system; good telegraph and telephone system; three good newspapers (one daily); large shad and sturgeon fisheries; the greatest game preserves in the country; the finest beach on the Atlantic coast—the Pawley Island summer resort, a place free of mosquitoes—besides there are two other island resorts; an abundant and pure water supply; modern sanitary sewerage system; fine electric lights; broad streets, macadamized, well laid out, and shaded with oak and elm trees; cement sidewalks; good country roads well kept; free ferries; the United States Government has spent $2,000,000 building jetties and improving the harbor of Georgetown, besides building canal and improving rivers; eighteen feet of water on ocean entrance at present and dredging continued to secure greater depth; many points of historic interest in city and county; good, live, progressive and liberal business men, who will welcome the capitalist, tourist, homeseeker, manufacturer, mechanic, farmer and all good citizens; large wholesale grocery and provision and feed stores; good retail stores, filled with well kept and complete stocks of merchandise, sold as cheap as at any other place in the State; the flavor of colonial life, culture and tradition, mingled with the snap and vim of twentieth century progress, exists in Georgetown.

12—Beaufort.—This historic town was laid out in 1717. In the vicinity today is to be seen the old fort built by Ribault in 1562. Two rarely beautiful eighteenth century structures—the club-house and St. Helena Church—are standing today, as is the wharf at which Lafayette landed and the house from which he addressed the citizens. Beaufort is a most desirable port and during the period of great activity in the phosphate industry it was in the very center of this industry, as it is geographically in the area of rich river beds of phosphate rock, the exports of which as late as 1895 were amounting to millions of dollars annually.

The city, which in 1890 had 3,587 population, and, in 1900, 4,110, today has a much larger population, and it is growing very rapidly since the recent development of the trucking industry begun only a few years ago and in consequence of splendid results attained by individual truckers. Beaufort is the coast terminus, practically, though Port Royal further down Beaufort river in the great harbor is actually, of the Charleston and Western Carolina Railway, formerly the Port Royal and Augusta Railroad, 82 miles distant from Charleston, 81

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miles from Savannah, and 108½ miles from Augusta. It is connected by steamboat lines with both the Carolina and the Georgia metropolis. It has the advantage of steamboat and railway connection with all parts of the country by means of intersecting trunk lines at Yemassee and Fairfax. Vessels are loaded to a depth of 18 feet at the Beaufort wharf, and one mile down the river they are loaded to 21 feet.

The health conditions are perfect owing to the location of the city, salt water being all around it and preventing malaria.

The business of the port of Beaufort is given in the chapter on Transportation. The city is electric lighted, roadways leading out of the town are of shell, the banking facilities are excellent, and telephonic service to all points is excellent.

Small manufacturing industries are numerous, among them being a veneer plant, truck crate and barrel factories, etc. There are ample facilities for the transaction of all kinds of commercial business, and these are increased by the steamer connections with Charleston and Savannah.

At this time many persons from other portions of the United States are moving to Beaufort and the surrounding country, and another half decade will doubtless witness a wonderful industrial and commercial development.

The soils of the surrounding country are wonderfully productive for almost anything that grows, particularly truck crops and cotton, and respond readily even without the use of commercial fertilizer, though an inexhaustive supply is at the farm gate as it were.

13—Anderson.—For real vigor of growth with every prospect of continuance under any conditions the city of Anderson, the county seat of Anderson county, in the heart of the Piedmont, is scarcely surpassed by any town of like size in the country, certainly not in South Carolina. There is that determined spirit of progressiveness displayed by the people which means substantial growth, against any obstructions. It has not been more than a few years ago that Anderson's growth began.

During the past summer the Walsh Directory Company issued a directory of the city of Anderson, which gave a population of 14,006. The same company, two years ago, issued a directory which gave a population of only 11,711. The Federal census of 1900 gave Anderson a population of 5,576. It is seen that the growth in population has been most remarkable. There has been a steady influx of people into the city of the most desirable kind to make good citizens.

The taxable property of Anderson County showed an increase of $765,981 in 1907, as compared with 1906, or an increase of about six and one-half per cent. The figures were: 1906, $12,035,746; in 1907, $12,801,727.

Figures as to taxable property in this State are always misleading to outsiders, for the reason that property is returned for taxation at anywhere from 20 to 60 per cent. of its true value. It should be remembered, then, in reviewing these figures, that the returns on the tax books should be just about one-third of the true value of property.

With this fact well in mind, it will be seen that the increase of nearly one million dollars in this county in a year makes a good showing. More than $275,000 of the increase or about 35 per cent. was in the city of Anderson alone. The growth and prosperity of the city has brought about higher prices for real estate, and this is being felt on the tax books. But it is to be borne in mind that the increase this year is for personal property, new buildings, etc., real estate being returned for taxation only once in four years. An increase of nearly 7 per cent. in taxable property, and a decrease of one-half of a mill in the tax levy, all in one year, makes a splendid showing, one of which any city might be proud. Anderson expended practically half a million dollars in 1907 for new buildings. A good hospital and a fine public library are included in this statement. Probably the most important factor of Anderson's progress during the year 1907 was the harnessing of the various streams for water power. When the year 1906 closed, there was developed not more than 5,000 horsepower in this community, but during the past year 2,600 additional horsepower was developed and plans have been perfected for the development of 126,000 horsepower.

Several years ago the Portman Shoals dam on the Seneca River was completed by the Anderson Water Company and since its completion has been furnishing about 5,000 horsepower. The Gregg Shoals dam, on the Savannah River, was completed about four months ago, and is now furnishing 2,000 horsepower. The power from these two plants is distributed to the cities of Anderson, Greenwood, Abbeville and Calhoun Falls. A consolidation of several water power companies in this neighborhood is now anticipated and the promoters have announced most emphatically that when it is completed, that a concern with a capitalization of $10,000,000 common stock and a $20,000,000 bond

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issue will be established. All of this money is for the development of the following falls, with their respective amounts of horsepower: Cherokee, 10,000; Calhoun, 30,000; Twin City, 40,000; Anthony, 20,000, and Hatton's, 10,000, making a total of 126,000 horse power. This new concern will absorb the Gregg Shoals plant. The Portman Shoals plant is a separate and distinct concern, but its output should be added to show the total amount of horsepower which will be 133,600. This will give Anderson more than an abundance of cheap power of the most desirable kind for manufacturing purposes, and will make this city one, if not the foremost, manufacturing cities of the South.

The biggest thing for Anderson during the year 1907 was the completion of the Anderson Traction Company's interurban lines. At present this company is operating about 18 miles of track and before the end of the coming year construction of the interurban line between Belton and Greenville, a distance of 27 miles, will be well under way. The electric lines in Anderson are only about three years old. Handsome dividends have been declared each year since the lines were constructed and excellent service has been rendered at all times. The company's lines at present are: Brogon Mill, 1.83 mils; Gluck Mills and Greenville Street, 4.4; Riverside and Toxaway Mills, 1.54, and Belton line, 10 miles, aggregating a trackage of 18 miles.

Cars ply between Anderson and Belton every 45 minutes and connections are made with every train on the Columbia and Greenville division of the Southern Railway at Belton for the North and South. Belton is a city of possibly 3,500 souls.

The managers of the Anderson Traction Company have announced that they have secured the rights of way for the construction of the line between Belton and Greenville. This line will pass through the enterprising towns of Williamston, Pelzer and Piedmont.

The power used in operating the city and interurban lines is secured from the various water powers on nearby rivers. It is contracted for with the Anderson Water, Light and Power Company.

Anderson County has more banks than any county in the State of South Carolina, save one. Two new banks were started in 1906 and one new one in 1907, and two have increased their capital stocks.

Nothing advertises a city more than its street improvements, and during the past nine months miles and miles of sidewalk paving have been put down, curbing has been installed and the streets graded and drained. On West Whitner, one of the principal thoroughfares of the city, vitrified brick have been laid from its intersection at the Plaza to the depot of the Charleston and Western Carolina Railroad, a distance of five or more blocks. While on a recent visit to Anderson, President W. W. Finley of the Southern Railway, which owns and controls the Blue Ridge Railroad, announced that the Blue Ridge road will be extended over the mountains into Tennessee, in order to give an outlet from the coal fields to some seaport.

During the fall of 1907 some citizens of Anderson, with some Georgia people, inaugurated a movement to construct a steam or an electric railroad between Anderson and Athens, Ga., a distance of 60 miles. The proposed routes are now being surveyed and will be ready for construction during the early part of the new year. This road will pass through a most fertile and prosperous country and will open up a country that has never enjoyed the facilities of a railroad.

About the best indication that can be had of the business of a city is the postoffice receipts. The receipts of the Anderson postoffice showed an increase of 10 per cent. for the fiscal year ending June 30, 1907, as compared with the fiscal year ending June 30, 1906. The receipts for the year ending June 30, 1906, were $20,230.98. The receipts for the fiscal year ending June 30, 1907, were $22,912.55, showing an increase of $2,681.57, or a fraction more than 10 per cent. This is a healthy increase, and shows unmistakably the increased business done in the city in all lines during the year. The last Congress made an appropriation of $50,000 for the purpose of erecting a postoffice building in Anderson. A suitable lot has been purchased at a cost of $6,500.

14—Florence.—This live and progressive city, with its population of patriotic business workers, is located in the very heart of the rich Pee Dee section of the State, and is the principal railroad center in that section, indeed being distinctly a railroad city, the Atlantic Coast Line system's shops being located there. Main and branch lines of the system converge at Florence. The Coast Line operates lines out of Florence as follows: To Charleston, 102 miles; to Wilmington, 112 miles; to Columbia, 85 miles; to Wadesboro, N. C., 84 miles, with connections to Raleigh and Charlotte, N. C.; to Fayetteville, N. C., 65 miles, and via Darlington to Bennettsville and Hamlet, N. C., and via Bennettsville to

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a connection with the Seaboard Air Line at Kollock. Florence also is less than 15 miles distant from the Great Pee Dee River, and but little further from Lynche's River, both by rail connection.

In 1890 the population of Florence was 3,395, and from that time the place grew rapidly, the population increasing steadily until in 1900 it was 4,647. and the city had 957 dwelling houses. If only the decennial rate of increase for the decade from 1890 to 1900 had kept up during the past seven years Florence's present population would be 5,552. But the rapid growth of the city since 1900 has driven the total population figures very much higher.

Florence was made the county seat when the county of Florence was established in 1888. Consequently taxes are not heavy and municipal improvements have been given every attention.

Florence is a central tobacco market, has spacious and well-built tobacco warehouses and does a very large volume of business in this respect. On account of its superior railroad advantages it is naturally the concentration point for the buyers and shippers.

The city has a splendid graded school system.

The railroad shops employ more than 400 men, most of whom are heads of families. The place has several good hotels, good newspapers (one a live daily), numerous diversified industrial plants, and considerable attention is given to dairying and cattle breeding.

15—Union.—The following summary of "Facts About Union" was issued in 1905 by the Chamber of Commerce of that progressive and growing Piedmont town. Union is situated on the Southern Railway, 65 miles north of Columbia, on through line between Cincinnati, Ohio, and Jacksonville, Fla., and has a delightfully healthful climate, and an abundance of purest filtered water. The population in 1890 was 1,609; in 1904, 12,000, including suburbs;a new railway connects Union with Seaboard Air Line at Prides; taxable property (assessed valuation) in 1890, $518,680, in 1904, $1,846,842; city owns waterworks with filter plant, electric light and sewerage system; has 36,000 square feet of cement pavements; an interurban electric railway; five cotton mills, with a paid in capital stock of $2,850,000, having 218,376 spindles, 5,550 looms, and using 56,750 bales of cotton a year; a knitting mill, which manufactures 20,000 pairs of hosiery a day, and makes everything necessary to market its product; annual pay roll of cotton and knitting mills amounts to more than $653,000; an oil mill, two big cotton ginneries, an iron foundry, an ice factory, with a capacity of 80,000 pounds per day, a furniture factory and two large woodworking establishments; a fine, well conducted hotel, costing $30,000; two newspapers; a printing establishment with a large patronage; local and long distance Bell Telephone system; three banks; a female seminary, five graded schools with twenty-five teachers and an enrollment this year of 1,883 pupils; fourteen churches; number of freight cars handled January, 1890, 140; in January, 1903, 397; railway ticket sale, 1890, $9,643; in 1903, $31,000; a $15,000 Carnegie Public Library; a reading room for the knitting mill operatives; large up-to-date steam laundry; complete road-working outfit for macadamizing streets; a $500,000 electrical power plant; a $10,000 cheese factory.

Other Towns.—Exactly similar facts could be given as to all of the growing towns of the State, but with no intention to discriminate such brief details as above given must be confined to typical towns in the various sections. Such thoroughly live towns as Bennettsville, with its magnificent surrounding farming country; Marion, with its commercial business and lumber interests; Conway, with its trucking industry and great lumber business; Gaffney, that wide-awake, progressive and hustling manufacturing and mining community of the Piedmont; Darlington, with its tobacco factories; Laurens, with its cotton and furniture manufacturing interests; Abbeville, with its varied industries; Aiken, with its matchless attractions as a health resort locality; Winnsboro, and the still smaller towns, all deserve the writing of their records. Perhaps another volume may in the near future deal more in detail with each of them.

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Chapter XVII.

The State by Counties

It is impossible to deal with the State by counties to any degree of completeness under such grouping, and consequently only such information as can be completely given is attempted. Geological, soil, climatic and other conditions are treated in foregoing chapters in such a manner that with the aid of the map any one is in a position to ascertain definitely any and all of the peculiar advantages attaching to any given county. Herewith is a statement showing the date of formation of each county, and the origin of the name and the county seat, which should be studied in connection with the data given in connection with the table of the population by counties given with the chapter on population.

Below are given for each county the area and the acreage of each of the principal crops for the census year 1900 (the only figures available), and the number of cotton manufacturing establishments, capital and value of products for 1907, for each county, in each instance the first figures given after the designation of the crop represent the acreage, the second the product in the standard of enumeration used in this volume, bale, pound, bushel, as the case may be, and the third the value, or, in case there is no statement of production, the value follows indicated by the dollar mark; in the case of live stock the first figures represent number, the second value; Lee County is omitted, as it did not exist until 1902:

Abbeville.—Population: 1900, 33,400; 1890, 46,850. Area, 682 square miles. Agricultural products: Corn, 40,212 acres, 346,540 bushels; cotton, 94,001 acres, 30,213 bales; wheat, 7,712 acres, 46,690 bushels; oats, 8,258 acres, 70,460 bushels; hay, 1,817 acres, 2,146 tons; rye, 7 acres, 60 bushels; barley, 48 acres, 610 bushels; rice, 1 acre, 496 bushels; tobacco, 1 acre, 200 pounds; potatoes, 46 acres, 2,210 bushels; vegetables, 766 acres, $36,739 value; cowpeas, 1,040 acres, 8,340 bushels; sweet potatoes, 668 acres, 41,572 bushels; orchard products, $13,350 value. Live stock and products: Domestic animals, including swine and goats, value, $529,037; swine, 9,799; poultry, value $46,272; milk, 1,901,655 gallons; butter, 407,715 pounds; eggs, 234,410 dozen. Textiles: Number of establishments, 1; capital, $642,700; value products, $650,000.

Aiken.—Population: 1900, 39,032; 1890, 31,822. Area, 1,096 square miles. Agricultural products: Corn, 75,966 acres, 703,080 bushels; cotton, 63,127 acres. 29,676 bales; wheat, 2,484 acres, 15,470 bushels; oats, 5,733 acres, 86,690 bushels; hay, 2,552 acres, 2,413 tons; rye, 504 acres, 2,190 bushels; rice, 234 acres, 94,926 bushels; tobacco, 3 acres, 500 pounds; potatoes, 195 acres, 12,526 bushels; vegetables, 2,112 acres, $74,343 value; cowpeas, 10,141 acres, 70,923 bushels; sweet potatoes, 1,137 acres, 81,637 bushels; orchard products, $8,319 value. Live stock and products: Domestic animals, including swine and goats, value $551,425; swine, 18,760; poultry, value $43,533; milk, 1,064,652 gallons; butter, 187,294 pounds; eggs, 258,270 dozen. Textiles: Number of establishments, 5; capital, $2,800,000; value products, $2,530,000.

Anderson.—Population: 1900, 55,728; 1890, 43,696. Area, 756 square miles. Agricultural products: Corn, 58,507 acres, 596,140 bushels; cotton, 123,992 acres, 43,366 bales; wheat, 17,164 acres, 118,010 bushels; oats, 8,862 acres, 76,990 bushels; hay, 2,354 acres, 2,982 tons; rye, 87 acres, 590 bushels; barley, 47 acres, 670 bushels; rice, 3 acres, 1,380 bushels; tobacco, 6 acres; 2,260 pounds; potatoes, 94 acres, 4,211 bushels; vegetables, 1,379 acres, $56,476 value; cowpeas, 581 acres, 4,704 bushels; sweet potatoes, 796 acres, 56,557 bushels; orchard products, $8,036 value. Live stock and products: Domestic animals, including swine and goats, value, $836,935; swine, 12,360; poultry, value $80,081; milk, 3,528,548 gallons; butter, 745,782 pounds; eggs, 401,750 dozen. Textiles: Number of establishments, 18; capital, $6,165,250; value products, $10,617,773.

Bamberg.—Population: 1900, 17,296. Area, 363 square miles. Agricultural products: Corn, 38,043 acres, 383,080 bushels; cotton, 38,162 acres, 17,912 bales; wheat, 504 acres, 4,590 bushels; oats, 2,954 acres, 42,180 bushels; hay, 53 acres, 64 tons; rye, 82 acres, 480 bushels; rice, 1,099 acres, 307,950 bushels; tobacco, 85 acres, 32,340 pounds; potatoes, 180 acres, 12,466 bushels; vegetables, 1,216 acres, $52,074 value; cowpeas, 6,438 acres, 5,098 bushels sweet potatoes, 306 acres, 32,863 bushels; orchard products, $1,038 value. Live stock and products: Domestic

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THE COUNTIES OF SOUTH CAROLINA.

	County-seat.	County organized (year).	Naming of Each County.
Abbeville	Abbeville	1798	After a town in France.
Aiken	Aiken	1871	After Wm. Aiken.
Anderson	Anderson	1827	After Col. Robert Anderson, of the Revolution.
Bamberg	Bamberg	1897	After Bamberg family.
Barnwell	Barnwell	1798	After Gen. John Barnwell, of the Revolution.
Beaufort	Beaufort	1768	After Henry, Duke of Beaufort, Lord Palatine of the Province.
Berkeley	Monck's Corner	1882	After Sir William Berkeley, and John, Lord Berkeley, two of the Proprietors.
Calhoun	St. Matthews	1908	After John C. Calhoun.
Charleston	Charleston	1768	After King Charles II.
Cherokee	Gaffney	1897	After Cherokee Indians.
Chester	Chester	1798	After Chester, in England.
Chesterfield	Chesterfield	1798	After English family of Chesterfield.
Clarendon	Manning	1855	After Edward, Earl of Clarendon, one of the Proprietors.
Colleton	Walterboro	1798	After Sir John Colleton, one of the Proprietors.
Darlington	Darlington	1798	Origin of name unknown.
Dorchester	St. George's	1897	After Dorchester, Massachusetts.
Edgefield	Edgefield	1798	Probably from geographical position at edge of State near Georgia.
Fairfield	Winnsboro	1798	Named, probably, from natural beauty of this region.
Florence	Florence	1888	After Florence, daughter of Gen. W. W. Harllee.
Georgetown	Georgetown	1768	After King George I.
Greenville	Greenville	1798	After Isaac Green, of that section.
Greenwood	Greenwood	1897	Named after the beauty of the region.
Hampton	Hampton	1878	Named after Gen. Wade Hampton.
Horry	Conway	1801	After Gen. Peter Horry, of the Revolution.
Kershaw	Camden	1798	After Col. Joseph Kershaw, who settled Camden (Pine Tree Hill).
Lancaster	Lancaster	1798	After Lancaster, England.
Laurens	Laurens	1798	After Henry Laurens.
Lee	Bishopville	1902	After Gen. Robert E. Lee.
Lexington	Lexington	1804	After Lexington, Massachusetts.
Marion	Marion	1798	After Gen. Francis Marion.
Marlboro	Bennettsville	1798	After the English Marlborough family.
Newberry	Newberry	1798	Origin of name unknown.
Oconee	Walhalla	1868	After the Oconee Indians.
Orangeburg	Orangeburg	1768	After 4th Prince of Orange, who married Anne, daughter King George II.
Pickens	Pickens	1827	After Gen. Andrew Pickens.
Richland	Columbia	1799	Named, probably, after a plantation of the same name owned by the Taylor family.
Saluda	Saluda	1895	Named after Saluda River.
Spartanburg	Spartanburg	1798	This territory was called the "Spartan" county in very early times.
Sumter	Sumter	1798	After Gen. Thomas Sumter.
Union	Union	1798	Named after the Union Church, which stands in this region.
Williamsburg	Williamsburg	1804	After Prince William, son of King George II.
York	Yorkville	1798	Named after York, England.

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animals, including swine and goats, value $280,025; swine, 15,432; poultry, value $23,172; milk, 363,865 gallons; butter, 33,092 pounds; eggs, 137,700 dozen. Textiles: Number of establishments, 1; capital $140,000; value products, $185,000.

Barnwell.—Population: 1900, 35,504; 1890, 44,613. Area, 870 square miles. Agricultural products: Corn, 88,463 acres, 814,130 bushels; cotton, 83,308 acres, 35,858 bales; wheat, 932 acres, 6,480 bushels; oats, 5,508 acres, 75,010 bushels; hay, 732 acres, 755 tons; rye, 204 acres, 1,230 bushels; rice, 767 acres, 260,482 bushels; tobacco, 94 acres, 30,664 pounds; potatoes, 96 acres, 7,295 bushels; vegetables, 1,819 acres, $122,505 value; cowpeas, 9,513 acres, 69,491 bushels; sweet potatoes, 975 acres, 92,956 bushels; orchard products, $5,102 value. Live stock and products: Domestic animals, including swine and goats, value $660,525; swine, 30,354; poultry, value $49,398; milk, 799,680 gallons; butter, 75,541 pounds; eggs, 265,430 dozen. Textiles: Number of establishments, 1; value products, $21,000.

Beaufort.—Population: 1900, 35,495; 1890, 34,119. Area, 943 square miles. Agricultural products: Corn, 28,968 acres, 398,610 bushels; cotton, 7,656 acres, 2,879 bales; wheat, 30 acres, 200 bushels; oats, 393 acres, 5,050 bushels; hay, 51 acres, 43 tons; rye, 9 acres, 40 bushels; barley, 1 acre, 6 bushels; rice, 9,361 acres, 7,864,612 bushels; potatoes, 934 acres, 49,102 bushels; vegetables, 1,016 acres, $41,158 value; cowpeas, 6,122 acres, 70,931 bushels; sweet potatoes, 5,184 acres, 192,474 bushels; orchard products, $2,698 value. Live stock and products: Domestic animals, including swine and goats, value $451,300; swine, 15,581; poultry, value $57,138; milk, 355,927 gallons; butter, 24,467 pounds; eggs, 479,630 dozen.

Berkeley.—Population: 1900, 30,454; 1890, 55,428. Area, 1,316 sqare miles. Agricultural products: Corn, 32,460 acres, 360,400 bushels; cotton, 21,224 acres, 9,982 bales; wheat, 275 acres, 2,560 bushels; oats, 1,390 acres, 20,460 bushels; hay, 446 acres, 466 tons; rye, 25 acres, 350 bushels; rice, 9,210 acres, 5,790,098 bushels; tobacco, 24 acres, 19,190 pounds; potatoes, 229 acres, 13,115 bushels; vegetables, 438 acres, $22,857 value; cowpeas, 4,440 acres, 48,276 bushels; sweet potatoes, 2,106 acres, 135,586 bushels; orchard products, $3,208 value. Live stock and products: Domestic animals, including swine and goats, value $434,217; swine, 21,033; poultry, value $35,317; milk, 541,274 gallons; butter, 19,660 pounds; eggs, 163,050 dozen.

Catawba Indian Reservation.—Agricultural products: Corn, 54 acres, 430 bushels; cotton, 32 acres, 9 bales; oats, 5 acres, 10 bushels; hay, 2 acres. Live stock and products: Domestic animals, including swine and goats, value $1,020; swine, 3; poultry, value $18; milk, 3,000 gallons; butter, 675 pounds; eggs, 200 dozen.

Charleston.—Population: 1900, 88,006; 1890, 59,903. Area, 687 square miles. Agricultural products: Corn, 11,698 acres, 178,350 bushels; cotton, 427 acres, 188 bales; wheat, 4 acres, 35 bushels; oats, 250 acres, 5,300 bushels; hay, 272 acres, 376 tons; rye, 7 acres, 90 bushels; rice, 2,641 acres, 2,034,744 bushels; potatoes, 2,127 acres, 225,404 bushels; vegetables, 3,140 acres, $328,850 value; cowpeas, 1,686 acres, 17,172 bushels; sweet potatoes, 3,679 acres, 203,817 bushels; orchard products, $4,764 value. Live stock and products: Domestic animals, including swine and goats, value $328,944; swine, 6,921; poultry, value $22,866; milk, 496,524 gallons; butter, 12,510 pounds; eggs, 145,040 dozen. Textiles: Number of establishments, 1; capital, $451,000; value products, $1,009,739.

Cherokee.—Population: 1900, 21,359. Area, 361 square miles. Agricultural products: Corn, 27,077 acres, 287,440 bushels; cotton, 32,583 acres, 11,912 bales; wheat, 7,007 acres, 32,830 bushels; oats, 2,315 acres, 15,370 bushels; hay, 647 acres, 639 tons; rye, 55 acres, 230 bushels; barley 5 acres, 70 bushels; rice, 1 acre, 24 bushels; tobacco, 1 acre, 290 pounds; potatoes, 22 acres, 1,205 bushels; vegetables, 710 acres, $25,846 value; cowpeas, 310 acres, 3,153 bushels; sweet potatoes, 269 acres, 21,190 bushels; orchard products, $2,140 value. Live stock and products: Domestic animals, including swine and goats, value $281,738; swine, 4,131; poultry, value $29,630; milk, 1,569,984 gallons; butter, 344,617 pounds; eggs, 157,020 dozen. Textiles: Number of establishments, 6; capital, $1,374,500; value products, $1,952,500.

Chester.—Population: 1900, 28,616; 1890, 26,660. Area, 592 square miles. Agricultural products: Corn, 42, 829 acres, 311,920 bushels; cotton, 64,663 acres, 21, 934 bales; wheat, 5,658 acres, 26,980 bushels; oats, 4,374 acres, 37,970 bushels; hay, 1,749 acres, 1,827 tons; rye, 44 acres, 160 bushels; barley, 2 acres, 3 bushels; potatoes, 45 acres, 1,821 bushels; vegetables, 515 acres, $23,221 value; cowpeas, 1,115 acres, 8,297 bushels; sweet potatoes, 321 acres, 21,176 bushels; orchard products, $2,906 value. Live stock and products: Domestic animals, including swine and goats, value $510,409; swine, 9,220; poultry, value $32,196; milk, 1,570,994 gallons; butter, 339,857 pounds; eggs, 234,960 dozen. Textiles: Number of establishments, 4; capital, $600,000; value products, $1,955,000.

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Chesterfield.—Population: 1900, 20,401; 1890, 18,468. Area, 823 square miles. Agricultural products: Corn, 35,608 acres, 313,040 bushels; cotton, 30,897 acres, 14,002 bales; wheat, 3,673 acres, 18,440 bushels; oats, 3,896 acres, 46,120 bushels; hay, 828 acres, 795 tons; rye, 365 acres, 1,260 bushels; barley, 2 acres, 6 bushels; rice, 14 acres, 5,756 bushels; tobacco, 225 acres, 166,070 pounds; potatoes, 137 acres, 8,671 bushels; vegetables, 534 acres, $28,789 value; cowpeas, 2,381 acres, 20,328 bushels; sweet potatoes, 600 acres, 41,482 bushels; orchard products, $5,274 value. Live stock and products: Domestic animals, including swine and goats, value $293,049; swine, 10,846; poultry, value $19,477; milk, 685,230 gallons; butter, 130,011 pounds; eggs, 134,130 dozen.

Clarendon.—Population: 1900, 28,184; 1890, 23,233. Area, 710 square miles. Agricultural products: Corn, 45,788 acres, 460,630 bushels; cotton, 45,660 acres, 23,642 bales; wheat, 91 acres, 860 bushels; oats, 3,693 acres, 58,410 bushels; hay, 1,905 acres, 1,385 tons; rye, 3 acres, 30 bushels; rice, 1,432 acres, 358,342 bushels; tobacco, 1,836 acres, 1,355,280 pounds; potatoes, 39 acres, 2,852 bushels; vegetables, 527 acres, value $30,823; cowpeas, 4,238 acres, 35,013 bushels; sweet potatoes, 1,272 acres, 111,043 bushels; orchard products, $2,287 value. Live stock products: Domestic animals, including swine and goats, value $425,020; swine, 20,036; poultry, value $27,800; milk, 455,164 gallons; butter, 41,193 pounds; eggs, 236,970 dozen. Textiles: Number of establishments, 1; value products, $40,000.

Colleton.—Population: 1900, 33,452; 1890, 40,293. Area, 1,351 square miles. Agricultural products: Corn, 53,707 acres, 562,180 bushels; cotton, 18,090 acres, 6,057 bales; wheat, 17 acres, 114 bushels; oats, 3,343 acres, 54,060 bushels; hay, 300 acres, 244 tons; rye, 18 acres, 150 bushels; rice, 13,846 acres, 11,319,208 bushels; tobacco, 18 acres, 8,240 pounds; potatoes, 1,357 acres, 155,380 bushels; vegetables, 1,682 acres, value, $189,528; cowpeas, 5,642 acres, 55,837 bushels; sweet potatoes, 2,381 acres, 146,734 bushels; orchard products, value, $9,382. Live stock products: Domestic animals, including swine and goats, value $594,487; swine, 31,200; poultry, value $38,291; milk, 507,866 gallons; butter, 36,233 pounds; eggs, 263,610 dozen. Textiles: Number of establishments, 1; capital, $100,000; value products, $76,000.

Darlington. Population: 1900, 32,388; 1890, 29,134. Area, 649 square miles. Agricultural products: Corn, 49,512 acres, 481,110 bushels; cotton, 55,951 acres, 28,832 bales; wheat, 1,501 acres, 15,020 bushels; oats, 9,101 acres, 155,180 bushels; hay, 3,694 acres, 3,220 tons; rye, 215 acres, 1,310 bushels; rice, 397 acres, 95,820 bushels; tobacco, 6,975 acres, 5,083,150 pounds; potatoes, 55 acres, 3,769 bushels; vegetables, 1,086 acres, value $57,853; cowpeas, 7,843 acres, 62,773 bushels; sweet potatoes, 1,361 acres, 117,331 bushels; orchard products, value $5,693. Live stock and products: Domestic animals, including swine and goats, value $426,271; swine, 17,518; poultry, value $49,428; milk, 479,920 gallons; butter, 76,821 pounds; eggs, 274,130 dozen. Textiles: Number of establishments, 2; capital, $1,324,300; value products, $1,075,000.

Dorchester.—Population: 1900, 16,294. Area, 564 square miles. Agricultural products: Corn, 21,916 acres, 224,690 bushels; cotton, 11,473 acres, 6,301 bales; wheat, 23 acres, 210 bushels; oats, 1,580 acres, 25,990 bushels; hay, 31 acres, 34 tons; rye, 3 acres, 40 bushels; rice, 2,612 acres, 714,594 bushels; potatoes, 129 acres, 7,472 bushels; vegetables, 261 acres, value $10,312; cowpeas, 2,077 acres, 14,704 bushels; sweet potatoes, 601 acres, 40,386 bushels; orchard products, value $1,308. Live stock and products: Domestic animals, including swine and goats, value $209,154; swine, 14,848; poultry, value $12,070; milk, 135,664 gallons; butter, 8,552 pounds; eggs, 96,950 dozen.

Edgefield.—Population: 1900, 25,478; 1890, 49,259. Area, 715 square miles. Agricultural products: Corn, 38,316 acres, 306,120 bushels; cotton, 58,366 acres, 20,960 bales; wheat, 2,593 acres, 16,080 bushels; oats, 11,343 acres, 117,720 bushels; hay, 897 acres, 1,019 tons; rye, 57 acres, 230 bushels; barley, 4 acres, 30 bushels; tobacco, 30 acres, 15,030 pounds; potatoes, 62 acres, 2,875 bushels; vegetables, 786 acres, value $34,508; cowpeas, 3,036 acres, 21,324 bushels; sweet potatoes, 844 acres, 54,947 bushels; orchard products, value $3,391. Live stock and products: Domestic animals, including swine and goats, value $460,141; swine, 9,664; poultry, value $31,835; milk, 1,486,784 gallons; butter, 322,990 pounds; eggs, 201,520 dozen. Textiles: Number of establishments, 1; capital, $120,800; value products, $167,908.

Fairfield.—Population: 1900, 29,425; 1890, 28,599. Area, 776 square miles. Agricultural products: Corn, 40,446 acres, 309,180 bushels; cotton, 75,918 acres, 24,305 bales; wheat, 3,394 acres, 18,430 bushels; oats, 5,048 acres, 65,500 bushels; hay, 752 acres, 768 tons; rye, 53 acres, 250 bushels; barley, 3 acres, 16 bushels; rice, 14 acres, 7,960 bushels; tobacco, 1 acre, 300 pounds; potatoes, 122 acres, 6,537 bushels; vegetables, 728 acres, value $26,185; cowpeas, 2,296 acres, 18,429 bushels; sweet potatoes, 701 acres, 42,947 bushels; orchard products, value

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$11,691. Live stock and products: Domestic animals, including swine and goats, value $514,181; swine, 8,985; poultry, value $31,808; milk, 1,033,040 gallons; butter, 205,729 pounds; eggs, 184,680 dozen. Textiles: Number of establsihments, 1; capital, $250,000; value products, $390,000.

Florence.—Population: 1900, 28,474; 1890, 25,027. Area, 630 square miles. Agricultural products: Corn, 39,983 acres, 381,970 bushels; cotton, 37,966 acres, 17,707 bales; wheat, 482 acres, 4,390 bushels; oats, 5,130 acres, 71,530 bushels; hay, 1,136 acres, 1,082 tons; rye, 140 acres, 590 bushels; rice, 1,119 acres, 205,164 bushels; tobacco, 3,961 acres, 2,995,410 pounds; potatoes, 119 acres, 8,943 bushels; vegetables, 626 acres, value $36,077; cowpeas, 3,730 acres, 33,537 bushels; sweet potatoes, 1,636 acres, 116,311 bushels; orchard products, value $7,817. Live stock and products: Domestic animals, including swine and goats, value $347,612; swine, 18,313; poultry, value $34,661; milk, 411,921 gallons; butter, 52,148 pounds; eggs, 177,490 dozen.

Georgetown.—Population: 1900, 22,846; 1890, 20,857. Area, 827 square miles. Agricultural products: Corn, 8,850 acres, 93,110 bushels; cotton, 1,690 acres, 689 bales; oats, 562 acres, 12,800 bushels; hay, 139 acres, 139 tons; rice, 14,157 acres, 10,259,430 bushels; tobacco, 10 acres, 9,000 pounds; potatoes, 48 acres, 2,638 bushels; vegetables, 461 acres, value $21,564; cowpeas, 928 acres, 9,098 bushels; sweet potatoes, 1,159 acres, 77,289 bushels; orchard products, value $1,968. Live stock and products: Domestic animals, including swine and goats, value $171,102; swine, 8,422; poultry, value $9,183; milk, 142,806 gallons; butter, 7,725 pounds; eggs, 49,250 dozen.

Greenville.—Population: 1900, 53,490; 1890, 44,310. Area, 745 square miles. Agricultural products: Corn, 63,549 acres, 621,380 bushels; cotton, 69,713 acres, 26,535 bales; wheat, 13,128 acres, 77,480 bushels; oats, 4,889 acres, 34,540 bushels; hay, 1,510 acres, 1,925 tons; rye, 455 acres, 1,630 bushels; barley, 18 acres, 180 bushels; rice, 28 acres, 8,512 bushels; tobacco, 33 acres, 14,290 pounds; potatoes, 58 acres, 2,790 bushels; vegetables, 1,240 acres, value $49,860; cowpeas, 942 acres, 8,479 bushels; sweet potatoes, 870 acres, 61,462 bushels; orchard products, value $5,899. Live stock and products: Domestic animals, including swine and goats, value $715,061; swine, 11,864; poultry, value $75,512; milk, 3,557,112 gallons; butter, 770,494 pounds; eggs, 375,030 dozen. Textiles: Number of establishments, 19, capital, $5,422,100; value products, $8,314,327.

Greenwood.—Population: 1900, 28,343. Area, 495 square miles. Agricultural products: Corn, 32,616 acres, 278,720 bushels; cotton, 70,601 acres, 23,655 bales; wheat, 5,158 acres, 33,630 bushels; oats, 11,091 acres, 106,601 bushels; hay, 2,084 acres, 1,984 tons; rye, 30 acres, 250 bushels; barley, 58 acres, 700 bushels; rice, 1 acre, 144 bushels; tobacco, 1 acre, 390 pounds; potatoes, 81 acres, 3,889 bushels; vegetables, 827 acres, value $32,050; cowpeas, 474 acres, 3,992 bushels; sweet potatoes, 570 acres, 35,590 bushels; orchard products, value $4,733. Live stock and products: Domestic animals, including swine and goats, value $462,316; swine, 7,786; poultry, value $34,642; milk, 1,503,491 gallons; butter, 328,395 pounds; eggs, 197,750 dozen. Textiles: Number of establishments, 4; capital, $1,832,300; value products, $2,935,000.

Hampton.—Population: 1900, 23,738; 1890, 20,544. Area, 936 square miles. Agricultural products: Corn, 50,483 acres, 500,760 bushels; cotton, 28,830 acres, 13,207 bales; wheat, 37 acres, 310 bushels; oats, 6,003 acres, 81,200 bushels; hay, 432 acres, 411 tons; rye, 35 acres, 110 bushels; rice, 5,130 acres, 3,383,572 bushels; potatoes, 65 acres, 4,633 bushels; vegetables, 647 acres, value $29,048; cowpeas, 4,673 acres, 35,920 bushels; sweet potatoes, 942 acres, 79,268 bushels; orchard products, value $4,539. Live stock and products: Domestic animals, including swine and goats, value $475,377; swine, 22,657; poultry, value $33,602; milk, 268,300 gallons; butter, 28,260 pounds; eggs, 218,520 dozen.

Horry.—Population: 1900, 23,364; 1890, 19,256. Area, 1,075 square miles. Agricultural products: Corn, 31,690 acres, 332,130 bushels; cotton, 12,426 acres, 5,679 bales; wheat, 39 acres, 470 bushels; oats, 1,122 acres, 17,150 bushels; hay, 680 acres, 613 tons; rye, 18 acres, 90 bushels; rice, 1,945 acres, 666,454 bushels; tobacco, 2,087 acres, 1,631,930 pounds; potatoes, 281 acres, 19,715 bushels; vegetables, 698 acres, value $39,090; cowpeas, 2,191 acres, 26,273 bushels; sweet potatoes, 3,164 acres, 252,175 bushels; orchard products, value $17,833. Live stock and products: Domestic animals, including swine and goats, value $349,365; swine, 35,814; poultry, value $40,386; milk, 433,375 gallons; butter, 38,578 pounds; eggs, 250,430 dozen.

Kershaw.—Population: 1900, 24,696; 1890, 22,361. Area, 705 square miles. Agricultural products: Corn, 34,956 acres, 334,330 bushels; cotton, 44,703 acres, 18,474 bales; wheat, 1,420 acres, 8,010 bushels; oats, 4,440 acres, 69,030 bushels; hay, 928 acres, 763 tons; rye, 62 acres, 206 bushels; rice, 761 acres, 248,276 bushels; tobacco, 165 acres, 112,220 pounds; potatoes, 45 acres, 3,255 bushels;

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vegetables, 506 acres, value $29,475; cowpeas, 5,086 acres, 36,019 bushels; sweet potatoes, 580 acres, 47,739 bushels; orchard products, value $3,716. Live stock and products: Domestic animals, including swine and goats, value $372,368; swine, 10,259; poultry, value $20,618; milk, 540,582 gallons; butter, 94,766 pounds; eggs, 114,440 dozen. Textiles: Number of establishments, 2; capital, $450,000; value products, $490,000.

Lancaster.—Population: 1900, 24,311; 1890, 20,761. Area, 501 square miles. Agricultural products: Corn, 33,859 acres, 364,210 bushels; cotton, 49,646 acres, 20,534 bales; wheat, 4,427 acres, 21,650 bushels; oats, 6,228 acres, 60,420 bushels; hay, 1,023 acres, 969 tons; rye, 67 acres, 310 bushels; rice, 4 acres, 1,530 bushels; tobacco, 1 acre, 150 pounds; potatoes, 66 acres, 3,763 bushels; vegetables, 836 acres, value $37,252; cowpeas, 1,240 acres; 8,697 bushels; sweet potatoes, 392 acres, 23,890 bushels; orchard products, value $38,959. Live stock and products: Domestic animals, including swine and goats, value $417,101; swine, 8,364; poultry, value $20,552; milk, 1,019,024 gallons; butter, 215,497 pounds; eggs, 145,890 dozen. Textiles: Number of establishments, 1; capital, $1,000,000; value products, $1,400,000.

Laurens.—Population: 1900, 37,382; 1890, 31,610. Area, 684 square miles. Agricultural products: Corn, 50,097 acres, 418,200 bushels; cotton, 105,364 acres, 40,442 bales; wheat, 10,972 acres, 64,620 bushels; oats, 7,432 acres, 56,720 bushels; hay, 2,192 acres, 2,253 tons; rye, 28 acres, 180 bushels; barley, 33 acres, 290 bushels; tobacco, 1 acre, 120 pounds; potatoes, 54 acres, 7,231 bushels; vegetables, 1,297 acres, value $50,984; cowpeas, 699 acres, 7,218 bushels; sweet potatoes, 1,374 acres, 88,903 bushels; orchard products, value $5,337. Live stock and products: Domestic animals, including swine and goats, value $623,697; swine, 9,599; poultry, value $15,671; milk, 1,806,096 gallons; butter, 319,738 pounds; eggs, 216,990 dozen. Textiles: Number of establishments, 5; capital, $1,020,000; value products, $2,024,573.

Lexington.—Population: 1900, 27,264; 1890, 22,181. Area, 885 square miles. Corn, 51,408 acres, 401,390 bushels; cotton, 32,904 acres, 13,637 bales; wheat, 11,397 acres, 56,920 bushels; oats, 10,869 acres, 131,590 bushels; hay, 2,181 acres, 2,163 tons; rye, 233 acres, 750 bushels; barley, 20 acres, 135 bushels; rice, 804 acres, 276,612 bushels; tobacco, 16 acres, 16,000 pounds; potatoes, 178 acres, 7,231 bushels; vegetables, 1,818 acres, value $70,298; cowpeas, 4,829 acres, 37,806 bushels; sweet potatoes, 1,374 acres, 88,903 bushels; orchard products, value $10,093. Live stock and products: Domestic animals, including swine and goats, value $527,676; swine, 17,896; poultry, value $42,722; milk, 906,300 gallons; butter, 149,534 pounds; eggs, 295,030 dozen. Textiles: Number of establishments, 3; capital, $262,500; value products, $725,000.

Marion. Population: 1900, 35,181; 1890, 29,976. Area, 993 square miles. Agricultural products: Corn, 52,145 acres, 576,450 bushels; cotton, 54,776 acres, 31,488 bales; wheat, 384 acres, 4,380 bushels; oats, 9,697 acres, 150,640 bushels; hay, 755 acres, 802 tons; rye, 13 acres, 80 bushels; barley, 8 acres, 80 bushels; rice, 310 acres, 107,862 bushels; tobacco, 7,336 acres, 6,145,000 pounds; potatoes, 131 acres, 11,088 bushels; vegetables, 854 acres, value $49,288; cowpeas, 4,863 acres, 39,032 bushels; sweet potatoes, 1,871 acres, 190,307 bushels; orchard products, value $8,841. Live stock and products: Domestic animals, including swine and goats, value $544,816; swine, 26,881; poultry, value $45,479; milk, 478,128 gallons; butter, 65,811 pounds; eggs, 234,700 dozen. Textiles: Number of establishments, 2; capital, $993,800; value products, $1,380,000.

Marlboro.—Population: 1900, 27,639; 1890, 23,500. Area, 509 square miles. Agricultural products: Corn, 35,486 acres, 474,340 bushels; cotton, 57,491 acres, 38,574 bales; wheat, 2,543 acres, 21,690 bushels; oats, 7,541 acres, 127,250 bushels; hay, 600 acres, 541 tons; rye, 241 acres, 1,020 bushels; barley, 2 acres, 3 bushels; rice, 60 acres, 17,458 bushels; tobacco, 202 acres, 146,610 pounds; potatoes, 26 acres, 2,199 bushels; vegetables, 854 acres, value $28,759; cowpeas, 3,079 acres, 27,913 bushels; sweet potatoes, 1,069 acres, 106,604 bushels; orchard products, value $1,411. Live stock and products: Domestic animals, including swine and goats, value $378,083; swine, 11,256; poultry, value $30,397; milk, 466,294 gallons; butter, 85,760 pounds; eggs, 213,660 dozen. Textiles: Number of establishments, 2; capital, $993,80; value products, $1,380,000.

Newberry.—Population: 1900, 30,182; 1890, 26,434. Area, 594 square miles. Agricultural products: Corn, 39,254 acres, 336,770 bushels; cotton, 58,429 acres, 23,921 bales; wheat, 6,925 acres, 42,900 bushels; oats, 10,198 acres, 106,580 bushels; hay, 3,015 acres, 2,680 tons; rye, 56 acres, 520 bushels; barley, 10 acres, 130 bushels; rice, 49 acres, 20,236 bushels; tobacco, 8 acres, 3,640 pounds; potatoes, 68 acres, 3,837 bushels; vegetables, 759 acres, value $34,131; cowpeas, 2,911 acres, 23,248 bushels; sweet potatoes, 755 acres, 46,864 bushels; orchard products, value $7,498. Live stock and products: Domestic animals, including swine and goats,

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value $487,754; swine, 11,599; poultry, value $33,855; milk, 1,075,896 gallons; butter, 217,631 pounds; eggs, 222,140 dozen. Textiles: Number of establishments, 4; capital, $1,330,000; value products, $2,400,000.

Oconee.—Population: 1900, 23,634; 1890, 18,687. Area, 641 square miles. Agricultural products: Corn, 35,080 acres, 414,150 bushels; cotton, 25,612 acres, 10,148 bales; wheat, 5,858 acres, 30,720 bushels; oats, 2,810 acres, 15,880 bushels; hay, 1,059 acres, 1,323 tons; rye, 469 acres, 1,370 bushels; rice, 1 acre, 70 bushels; tobacco, 40 acres, 13,670 pounds; potatoes, 96 acres, 5,390 bushels; vegetables, 626 acres, value $30,095; cowpeas, 598 acres, 4,841 bushels; sweet potatoes, 513 acres, 36,434 bushels; orchard products, value $8,308. Live stock and products: Domestic animals, including swine and goats, value $334,757; swine, 6,613; poultry, value $29,634; milk, 1,497,414 gallons; butter, 304,581 pounds; eggs, 153,570 dozen. Textiles: Number of establishments, 7; capital, $1,038,500; value products, $1,635,881.

Orangeburg.—Population: 1900, 59,663; 1890, 49,393. Area, 1,345 square miles. Agricultural products: Corn, 110,984 acres, 1,172,520 bushels; cotton, 117,735 acres, 65,433 bales; wheat, 2,919 acres, 21,210 bushels; oats, 8,269 acres, 128,200 bushels; hay, 2,014 acres, 1,614 tons; rye, 223 acres, 1,250 bushels; barley, 5 acres, 40 bushels; rice, 7,333 acres, 2,266,162 bushels; tobacco, 456 acres, 332,150 pounds; potatoes, 191 acres, 12,210 bushels; vegetables, 1,059 acres, value $59,328; cowpeas, 13,480 acres, 105,482 bushels; sweet potatoes, 1,981 acres, 149,249 bushels; orchard products, value $7,767. Live stock and products: Domestic animals, including swine and goats, value $1,034,578; swine, 48,437; poultry, value $58,849; milk, 817,056 gallons; butter, 63,744 pounds; eggs, 393,560 dozen. Textiles: Number of establishments, 2; capital, $275,000; value products, $610,000.

Pickens.—Population: 1900, 19,375; 1890, 16,389. Area, 531 square miles. Agricultural products: Corn, 34,737 acres, 415,390 bushels; cotton, 28,964 acres, 12,577 bales; wheat, 7,650 acres, 46,840 bushels; oats, 2,153 acres, 15,470 bushels; hay, 716 acres, 818 tons; rye, 259 acres, 1,120 bushels; barley, 4 acres, 37 bushels; rice, 35 acres, 7,604 bushels; tobacco, 20 acres, 8,900 pounds; potatoes, 25 acres, 1,742 bushels; vegetables, 512 acres, value $20,964; cowpeas, 426 acres, 3,604 bushels; sweet potatoes, 449 acres, 34,978 bushels; orchard products, value $6,617. Live stock and products: Domestic animals, including swine and goats, value $356,774; swine, 7,247; poultry, value $34,004; milk, 1,664,400 gallons; butter, 346,940 pounds; eggs, 185,260 dozen. Textiles: Number of establishments, 7; capital, $1,501,300; value products, $2,522,000.

Richland.—Population: 1900, 45,589; 1890, 36,821. Area, 605 square miles. Agricultural products: Corn, 30,399 acres, 320,860 bushels; cotton, 35,182 acres, 14,373 bales; wheat, 1,474 acres, 9,520 bushels; oats, 4,345 acres, 54,280 bushels; hay, 2,467 acres, 2,548 tons; rye, 26 acres, 250 bushels; rice, 435 acres, 134,736 bushels; tobacco, 5 acres, 4,000 pounds; potatoes, 138 acres, 7,734 bushels; vegetables, 949 acres, value $44,538; cowpeas, 3,579 acres, 25,059 bushels; sweet potatoes, 997 acres, 63,548 bushels; orchard products, value $7,223. Live stock and products: Domestic animals, including swine and goats, value $375,802; swine, 11,051; poultry, value $24,195; milk, 608,224 gallons; butter, 71,102 pounds; eggs, 143,410 dozen. Textiles: Number of establishments, 8; capital, $5,562,900; value products, $4,827,302.

Saluda.—Population: 1900, 18,966. Area, 438 square miles. Agricultural products: Corn, 31,872 acres, 305,190 bushels; cotton, 40,761 acres, 17,520 bales; wheat, 7,475 acres, 50,210 bushels; oats, 13,464 acres, 160,990 bushels; hay, 753 acres, 660 tons; rye, 16 acres, 115 bushels; barley, 4 acres, 60 bushels; rice, 1 acre, 170 bushels; tobacco, 3 acres, 1,400 pounds; potatoes, 27 acres, 1,304 bushels; vegetables, 900 acres, value $56,113; cowpeas, 1,171 acres, 8,660 bushels; sweet potatoes, 521 acres, 37,633 bushels; orchard products, value $1,563. Live stock and products: Domestic animals, including swine and goats, value $417,438; swine, 9,351; poultry, value $39,617; milk, 1,039,605 gallons; butter, 206,955 pounds; eggs, 208,870 dozen.

Spartanburg.—Population: 1900, 65,560; 1890, 55,385. Area, 762 square miles. Agricultural products: Corn, 68,993 acres, 684,330 bushels; cotton, 87,594 acres, 35,390 bales; wheat, 18,693 acres, 95,970 bushels; oats, 7,718 acres, 48,020 bushels; hay, 934 acres, 1,087 tons; rye, 107 acres, 590 bushels; barley, 4 acres, 20 bushels; rice, 32 acres, 21,364 bushels; tobacco, 6 acres, 2,300 pounds; potatoes, 60 acres, 3,107 bushels; vegetables, 1,071 acres, value $40,615; cowpeas, 897 acres, 6,287 bushels; sweet potatoes, 908 acres, 60,942 bushels; orchard products, value $5,801. Live stock and products: Domestic animals, including swine and goats, value $811,680; swine, 10,128; poultry, value $77,081; milk, 3,707,820 gallons; butter, 804,528 pounds; eggs, 410,580 dozen. Textiles: Number of establishments, 24; capital, $8,940,300; value products, $12,717,851.

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Sumter.—Population: 1900, 51,237; 1890, 43,605. Area, 860 square miles. Agricultural products: Corn, 71,020 acres, 762,120 bushels; cotton, 93,598 acres, 48,485 bales; wheat, 705 acres, 7,270 bushels; oats, 8,759 acres, 149,900 bushels; hay, 1,766 acres, 1,466 tons; rye, 3 acres, 31 bushels; barley, 2 acres, 15 bushels; rice, 1,616 acres, 386,554 bushels; tobacco, 1,129 acres, 840,950 pounds; potatoes, 280 acres, 19,761 bushels; vegetables, 973 acres, value $53,174; cowpeas, 10,768 acres, 73,563 bushels; sweet potatoes, 2,218 acres, 171,594 bushels; orchard products, value $9,500. Live stock and products: Domestic animals, including swine and goats, value $680,040; swine, 22,740; poultry, value $49,372; milk, 717,948 gallons; butter, 80,908 pounds: eggs, 270,460 dozen. Textiles: Number of establishments, 1; capital, $42,800; value products, $101,500.

Union.—Population: 1900, 25,501; 1890, 25,363. Area, 495 square miles. Agricultural products: Corn, 32,084 acres, 265,630 bushels; cotton, 53,783 acres, 18,417 bales; wheat, 3,637 acres, 18,430 bushels; oats, 2,764 acres, 18,950 bushels; hay, 161 acres, 203 tons; rye, 14 acres, 130 bushels; potatoes, 31 acres, 1,774 bushels; vegetables, 568 acres, value $24,396; cowpeas, 1,299 acres, 9,101 bushels; sweet potatoes, 436 acres, 30,382 bushels; orchard products, value $2,165. Live stock and products: Domestic animals, including swine and goats, value $389,964; swine, 6,353; poultry, value $30,256; milk, 1,396,762 gallons; butter, 307,050 pounds; eggs, 157,770 dozen. Textiles: Number of establishments, 6; capital, $8,072,000; value products, $5,980,000.

Williamsburg.—Population: 1900, 31,685; 1890, 27,777. Area, 991 square miles. Agricultural products: Corn, 48,919 acres, 466,570 bushels; cotton, 41,067 acres, 18,631 bales; wheat, 70 acres, 620 bushels; oats, 2,892 acres, 38,840 bushels; hay, 1,224 acres, 1,139 tons; rice, 2,206 acres, 491,826 bushels; tobacco, 1,217 acres, 904,330 pounds; potatoes, 56 acres, 2,284 bushels; vegetables, 908 acres, value $44,018; cowpeas, 5,746 acres, 46,178 bushels; sweet potatoes, 1,823 acres, 131,595 bushels; orchard products, value $9,331. Live stock and products: Domestic animals, including swine and goats, value $496,230; swine, 28,842; poultry, value $39,975; milk, 517,002 gallons; butter, 43,878 pounds; eggs, 215,440 dozen.

York.—Population: 1900, 41,684; 1890, 38,831. Area, 669 square miles. Agricultural products: Corn, 54,023 acres, 464,020 bushels; cotton, 75,815 acres, 26,669 bales; wheat, 15,790 acres, 77,080 bushels; oats, 6,122 acres, 46,610 bushels; hay, 2,069 acres, 1,573 tons; rye, 23 acres, 90 bushels; barley, 1 acre, 5 bushels; potatoes, 75 acres, 2,756 bushels; vegetables, 920 acres, value $36,018; cowpeas, 562 acres, 2,902 bushels; sweet potatoes, 400 acres, 28,752 bushels; orchard products, value $5,238. Live stock and products: Domestic animals, including swine and goats, value $603,500; swine, 10,832; poultry, value $53,162; milk, 2,475,931 gallons; butter, 533,675 pounds; eggs, 288,010 dozen. Textiles: Number of estab lishments, 2; capital, $298,700; value products, $500,000.

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THE EXECUTIVE MANSION AND HAMPTON'S HOME, THE HOUSE PRESENTED TO HIM BY THE PEOPLE OF THE STATE, WHERE HE DIED.

CHAPTER XVIII.

Statistics and General Information Not Otherwise Classified

Value of Property.—The statistical abstract of the United States, published in 1906, gives for the year 1904 the following estimated true value of all property and of specified classes of property in the State of South Carolina—no figures later than 1904 are available:

ESTIMATED TRUE VALUE OF ALL PROPERTY AND OF SPECIFIED CLASSES OF PROPERTY IN SOUTH CAROLINA.

	1900.	1904.	1907.*
Total	$485,678,048	$585,853,222	$660,984,601
Real property and improvements (Ex. R. R.'s and Tels.)	238,201,109	252,766,767	263,690,009
Live stock	21,296,514	31,457,603	39,078,419
Farm implements and machinery	6,629,770	7,412,083	7,998,817
Manufacturing machinery, tools and implements	26,096,931	48,144,618	64,680,381
Gold and silver, coin and bullion	22,085,504	24,891,557	26,996,096
Railroads and their equipments	59,178,000	75,500,000	87,741,500
Street railways, shipping, water works, etc., including telegraph and telephone systems, electric light and power stations, Pullman and private cars and canals	13,385,076	18,697,576	22,681,951
All other	98,805,144	126,983,018	148,116,422
Estimated true value of real property and improvements:			
Average value per acre	12.20	12.95	
Average value per capita	177.72	178.51	

*Estimated.

NOTE.—Over $20,000,000 of real property exempt from taxation.

The Assessed Value of all property in South Carolina has been as follows in recent years: 1900, $176,422,288; 1905, $220,224,505; 1906, $249,534,422.

The levy was 4½ mills on the dollar in 1906, against 5 mills in 1905, and 5½ in 1904. For details of valuations, giving figures as to real, personal and railroad property separately, see report of Comptroller-General.

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The Tax Rate per $100 of assessed valuation in South Carolina each year for decennial periods to 1890, and for principal years since, has been: 1860, 26 cents; 1870, $1.50; 1880, $1.38; 1890, $1.63; 1902, $1.91.

TABLE I.

PROPERTY OWNED BY THE STATE.

University of South Carolina, Columbia	$ 650,000
South Carolina Military Academy, Charleston	150,000
Medical College of South Carolina, Charleston	400,000
Institute for Deaf and Blind, Cedar Springs	100,000
Clemson Agricultural College, Clemson	681,968
Normal and Industrial College, Rock Hill	450,000
Colored Normal and Industrial College, Orangeburg	150,000
Books in these institutions	163,700
State Dispensary buildings, Columbia	57,000
Stock in Dispensary	150,000
State Armory, Columbia	17,750
State House, Columbia	3,750,000
Public lands and sinking fund	843,000
State Reformatory, Florence.	24,500
Lexington Reformatory, lands and buildings	10,000
Lexington Reformatory, personal	3,000
State farms in Sumter, Richland and Lexington counties	65,000
Products State farms	70,000
Personal property State farms	8,500
Penitentiary real estate, Columbia	135,000
Penitentiary, personal	5,000
Property of State Hospital for the Insane:	
Value of buildings	591,000
Value of 360 acres	360,000
Value of stock and equipment	16,000
Value of furnishing stores, etc.	20,000
Value (approximately) of products from farm annually	35,000
Total	$8,906,418

The Public Debt of South Carolina, less sinking fund assets, is $6,603,095. Upon conservative estimates as to value of property owned by the State, South Carolina today possesses, in actual property, $8,906,418. The details of this statement are given in Table I herewith. The item of income from taxes is not included, from the fact that they offset the expenses of the State from year to year.

In the United States Senate, South Carolina is at present represented by Benj. R. Tillman, Trenton, and Frank B. Gary, Abbeville; in the National House are, in the order given by numerical districts, the following: Geo. S. Legare, Charleston; J. O. Patterson, Barnwell; Wyatt Aiken, Abbeville; Jos. T. Johnson, Spartanburg; David E. Finley, Yorkville; J. Edwin Ellerbe, Sellers; Asbury F. Lever, Lexington.

South Carolina's Vote.—In 1904 the nine electoral votes were cast for Parker, Democrat. The popular vote for President was 55,879; for Governor in 1906 the vote in the general election was 30,283.

Vote of the State Since 1872.—1872, for President, Dem. 22,683, Rep. 72,290, maj. 49,607 R.; 1876, for President, Dem. 91,540, Rep. 92,081, maj. 641 R.; 1880, for President, Dem. 112,312, Rep. 58,071, maj. 54,241 D.; 1884, for President, Dem. 69,845, Rep. 21,733, maj. 48,112 D.; 1886, for Governor, Dem. 33,111, maj. 33,111 D.; 1888, for President, Dem. 65,825, Rep. 13,736, maj. 52,089 D.; 1892, for Governor, Pop. 2,407, Dem. 54,692, Rep. 13,345, maj. 41,347 D.; 1894, for Governor, Dem. 39,507, Rep. 17,278, maj. 22,229 D.; 1896, for Governor, Dem. 59,424, Reorganized Rep. 4,432, Regular Rep. 2,780, maj. 54,999 D.; 1896, for President, Dem. 58,798, Reorganized Rep. 4,223, Regular Rep. 5,058, maj. 49,517 D.; 1898, for Governor, Dem. 28,159, no opposition; 1900, for Governor, Dem. 46,459, no opposition; 1900, for President, Dem. 47,236, Rep. 3,579, maj. 43,657 D.; 1902, for Governor, Dem. 31,817, no opposition; 1904, for President, Dem. 52,563, Rep. 2,554, maj. 50,009 D.; 1906, for Governor, Dem. 30,251, Rep. 32, maj. 30,219 D.

South Carolinians in National Contests.—In 1792 John Rutledge was a candidate in the Presidential contest; 1796 Thos. Pinckney and Charles Cotesworth Pinckney ran for President; in 1800 and again in 1804 Charles C. Pinckney was a candidate for President of the United States; in 1824 Jno. C. Calhoun was elected Vice President and was re-elected in 1828. Jno. Rutledge, from 1789 to 1791 and 1795 to 1797, was a Justice of the United States Supreme Court; Wm. Johnson, from 1804 to 1834 was a Justice of the United States Supreme Court. South Carolina furnished the following Presidents pro tempore of the

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United States Senate: Ralph Izard, 1794-1795; Jacob Read, 1797-1798; Jno. Gaillard, 1810-1811, and 1820-1826, and the following Speakers of the United States House of Representatives: Langdon Cheves, 1814-1815; Jas. L. Orr, 1857-1859. The Secretaries of State of the United States have been Hugh S. Legare, 1843, under Tyler, and Jno. C. Calhoun, 1844, under Tyler. The Secretaries of War have been Jno. C. Calhoun, 1817, under Monroe, and Joel R. Poinsett, 1837, under Van Buren. Only one Secretary of the Navy has been from South Carolina—Paul Hamilton, 1809, under Madison—and she has had only one Attorney General of the United States—Hugh S. Legare, 1841, under Tyler. South Carolinians have been Ministers to foreign countries as follows: Henry Middleton, 1820, to Russia, under Monroe and J. Q. Adams; Francis W. Pickens, 1858, to Russia, under Buchanan; Jas. L. Orr, 1872, to Russia, under Grant; Thos. Pinckney, 1792, to Great Britain; Chas. Pinckney, 1796, to France, under Washington and Jno. Adams; W. R. Calhoun, Charge d'Affaires, 1859, to France, under Buchanan; Thos. Pinckney, 1794, to Spain, under Washington; Chas. Pinckney, 1801-07, to Spain, under Jefferson; A. Middleton, 1836, Charge d'Affaires, to Spain, under Jackson.

Commercial Business.—It is impossible to give accurate figures showing the volume of wholesale commercial business or even of retail business being done in South Carolina at this time as compared with any other decade. Until a State census of business conditions has been made, accurate figures will be unobtainable. But there has been within the last five years a wonderful development of commercial business, due in part, perhaps, to the wonderful development in the manufacturing industry, converting some 150,000 white persons from self-sustaining producers to the consuming class. The opening of water navigation and establishment of better freight rates from the Eastern markets into the heart of South Carolina perhaps have had something to do with it. During the period of war and immediately following commercial business was practically suspended in South Carolina. During the period from 1870 to 1882, however, with the restoration of peace and quiet, the number of traders and dealers increased over 30 per cent., numbering, however, at that time only 74 more than they did in 1860 when the war broke out. This year the average value of property appertaining to merchandise in South Carolina is very nearly $10,000,000, and Anderson County stands fifth on the list, Richland and Charleston of course leading. This valuation, of course, is hardly more than 60 per cent., according to the estimate of returns in this State. Between 1900, when this State had only 5,569 retail merchants and dealers and 156 wholesale merchants and dealers, and the succeeding twelve months the total number had grown to 8,630. In 1903 this number had grown to 9,789, and if only the same percentage of increase is maintained there are now something over 11,000 strictly commercial retail and wholesale dealers in South Carolina. There is every reason to believe, from a general knowledge of the progress of the State and in the light of the actual figures as to progress on other lines, that this percentage of increase has been very much greater.

There is no way, also, of ascertaining exactly how many commercial travelers there are going through the State of South Carolina continuously. Almost every Eastern and Western house of any consequence has its men traveling this State from the mountains to the seaboard. Within the State itself in 1900 there were 486 native-born commercial travelers, and two of these were women; and it is worthy of note that of the men 317 were married men.

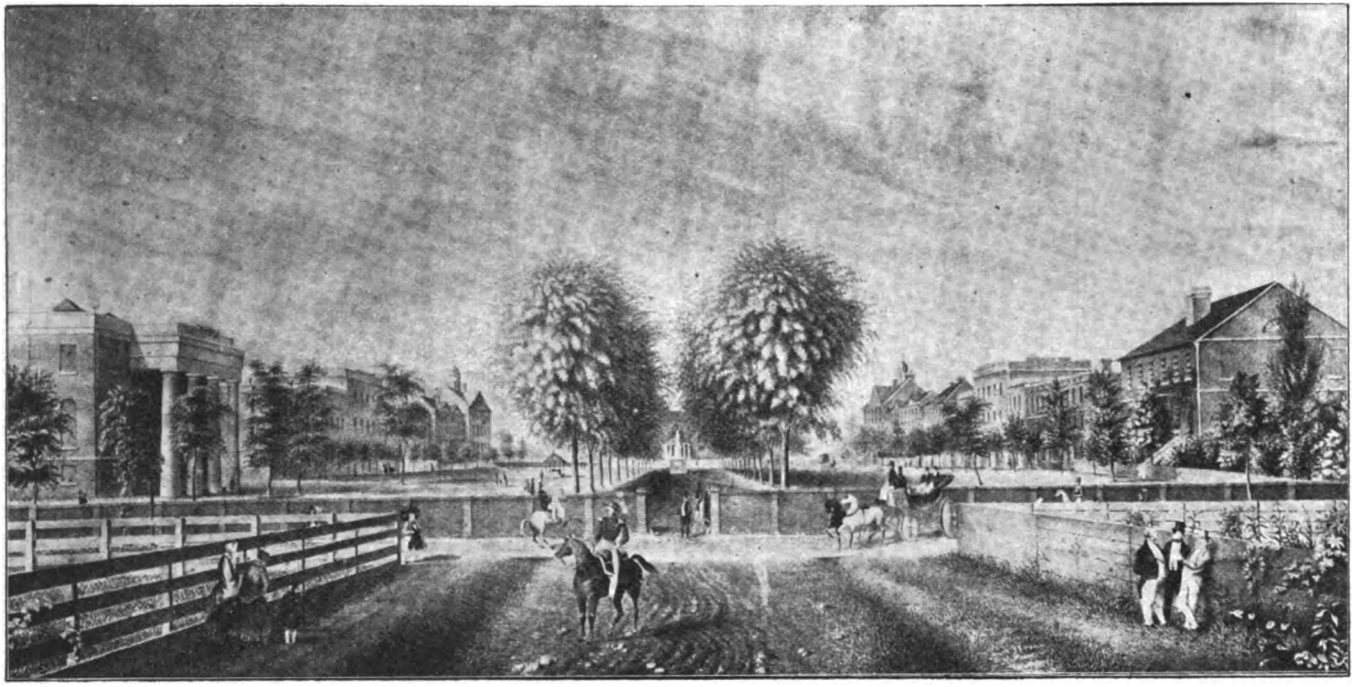
Up to the time the Congaree River was opened to navigation wholesale business in the capital of the State was practically nothing, the railroad rates being such that it was impossible to compete even in our own territory with surrounding cities. With the opening of this river and the reduction of rates from New York, Boston, Philadelphia and other Eastern points that followed, wholesale houses were opened in Columbia. The manager of one of these houses states that today his house has commercial travelers going over as many as fifteen States. The possibilities of wholesale business in South Carolina are really unlimited.

Internal Revenue Collections.—1900, $312,911.22; 1901, $310,590.57; 1902, $458,075.29; 1903, $616,800.33; 1904, $759,599.28; 1905, $780,790.87; 1906, $570,616.10.

United States Pensioners.—South Carolina has residing within her borders 2,095 pensioners of the United States, who receive from the Government $259,979.28.

The First Election.—The very first election of which there is any record was the choosing of five men "to be of the council" of Port Royal. This election was ordered by Gov. Sayle in 1669, who summoned "the freemen" for the purpose. The legality of this election was challenged by Wm. Owen, but the freemen met a second time and confirmed the first election.

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SOUTH CAROLINA COLLEGE BEFORE THE WAR.

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State Militia.—South Carolina State militia is well organized and equipped and is under the direction of the Adjutant-General of the State, the Governor of the State being the Commander-in-Chief. The table shows the strength of the militia for the past four years.

	Naval Militia.		General Militia.	
	Officers.	Enlisted Men.	Officers.	Enlisted Men.
1903	21	271	257	3,435
1904	20	184	259	3,486
1905	18	139	228	2,554
1906	18	143	174	1,491
1907	25	175	—	1,770

There has been under the operations of the new United States law considerable reduction in the force during the past few years, but what has been lost in numbers has more than been compensated for in efficiency.

The State of South Carolina has a small but efficient Naval Militia force. The statement of officers and enlisted men by years is given above.

Political Parties.—The member of the National Democratic Executive Committee for South Carolina is United States Senator B. R. Tillman; the member of the same committee for the Republican party is John G. Capers, United States Commissioner of Internal Revenue. Gen. Wilie Jones, of Columbia, is chairman of the State Democratic Executive Committee of the Democratic party; and E. H. Deas, of Darlington (negro), occupies the same position for the Republican party.

United States Supreme Court Justices.—South Carolinians have from the earliest days been prominent in the Judiciary of the United States. The second Chief Justice of the United States Supreme Court was John Rutledge, whose term was from 1789 to 1791. He was born in 1739 and died in 1800. He was also Chief Justice during the year 1795. Wm. Johnson was Associate Justice of the United States Supreme Court for thirty years, from 1804 to 1834, during the term of Chief Justice John Marshall.

Federal Judiciary in South Carolina.—The District Judge of the United States in South Carolina is W. H. Brawley, Charleston, appointed in 1894. The United States District Attorney for the District of South Carolina is Ernest S. Cochran, appointed February 1, 1906.

Other Federal Officers.—The United States Collector of Customs at the port of Charleston is William D. Crum (negro); the Collector at the port of Beaufort is Robert Smalls (negro), and at Georgetown, Isaiah J. McCottrie. The Postmaster of Charleston is W. L. Harris, appointed in 1903; the Postmaster at Columbia is Geo. L. Huggins, appointed in 1907.

Pay of Legislators.—The pay of members of the Legislature is $4 per diem and mileage to and from the capital, but this pay is limited to a session of forty days.

United States Consuls.—The only South Carolinians at present in the Consular Service of the United States are: Julius D. Dreher, who is Consul at Tahiti, and Herman L. Spahr, who is Consul at Breslau, Germany.

Pardon Board.—The Board of Pardons is in the nature of an advisory board, which hears applications for pardons and makes recommendations thereon to the Governor. These recommendations have no official sanction until approved by the Governor, and he can disregard this entirely. The law, however, provides that if the Governor does not follow the recommendations of the Board he must submit his reasons to the General Assembly. The Board of Pardons was created by legislative enactment in 1906.

Distance and Postal Time.—From New York city to Charleston, a distance of 804 miles, the time is 21¼ hours. From New York city to Columbia, a distance of 717 miles, the postal time is 24 hours.

Dimensions of the State.—The extreme breadth, from east to west, of the State of South Carolina is 235 miles; the extreme length, from north to south, is 215 miles.

Ratification of Federal Constitution.—South Carolina was the eighth State to ratify the Constitution of the United States, the ratification occurring on May 23, 1788. The first State to ratify was Delaware, on December 7, 1787.

Commerce.—One of the earliest commercial organizations was the Charleston Chamber of Commerce, which was founded in 1774. This organization has been maintained from that time until the present.

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Camden.—The town of Camden grew from the settlement of the present site in 1758 by Joseph Kershaw. It was due to his influence that the town of Camden was laid out and established.

First Theatre in America.—The record shows that as early as 1733 a play house existed in the city of Charleston, at which concerts were given. In 1735 a new theatre was built and the first play in February of that year was a tragedy called "The Orphan." This was undoubtedly the first theatre in the American Colonies, the next attempt being in 1749 in the city of Philadelphia. The old play house is yet pointed out to visitors to the city of Charleston. (See McCrady's History, Vol. II, page 526.)

The first insurance company in America was organized on December 13, 1735, the organization being completed in February of the following year, under the name of the Friendly Society, with a capital of 100,000 pounds. It was organized by the leading men of the city of Charleston "for the mutual insurance of their houses against fire."

Legal holidays in South Carolina are as follows: January 1, New Year's Day; January 19, Lee's Birthday; February 22, Washington's Birthday; May 10, Confederate Memorial Day; June 3, Jefferson Davis' Birthday; July 4, Independence Day; September (first Monday), Labor Day; November (first Tuesday), General Election Day, in election years; November (fourth Thursday), Thanksgiving Day; October—(Thursday) of State Fair Week.

Historic Church.—In the town of Cheraw is the historic old Episcopal Church of St. David's, built during the Revolutionary War. This church, then owned by the Baptists, was used as a hospital by the Americans, but when Lord Cornwallis of the British Army occupied the town he drove out the sick and wounded American soldiers, and used it as a stable for his horses, the marks of whose teeth can be seen upon the wainscoting.

First Monument to Confederate Dead.—In the beautiful grounds that surround this historic old building the first monument to the Confederate dead was erected July 26, 1867, by the Ladies' Memorial Association of that town in loving remembrance of the brave heroes of that county and town.

Legal Weights.—The following are the legal weights per bushel in pounds in this State: Corn meal, 48; corn meal, bolted, 46; corn meal, unbolted, 48; cotton seed, 30; cotton seed, staple, 42.

The highest altitude in South Carolina is Rich Mountain, which is 3,569 feet high.

To Her Sons.—On May 27, 1901, there was unveiled on Chickamaugua battlefield South Carolina's beautiful monument to the memory of her sons who sacrificed their lives in that memorable battle. The handsome monument is on the field near Snodgrass Hill. Gov. McSweeney, accompanied by a Provisional South Carolina militia regiment, attended the ceremonies, and Bishop Ellison Capers, who was in the famous charge up the hill by the Palmetto State soldiers, made the opening prayer at the unveiling ceremonies. Gen. Kershaw commanded the South Carolina Brigade on the memorable September 20, 1863, when he charged up the hill after crossing a great level plain and dislodged the enemy. The monument is one worthy of the State.

Banking.—The banking interests in South Carolina are of such importance that a whole chapter could properly be devoted to them. They are of vital importance to the commercial, industrial and agricultural development of the State. At this time they are in a prosperous condition, and scarcely a town of any consequence in the State is without its banks, either National, State or private. The State has a State Banking Examiner, who carefully and regularly watches the operations of all these institutions. It is rare that a bank failure is chronicled in South Carolina. The value of banking to the State is easily seen from the general statement issued in 1904, which is as follows:

Character.	No.	Capital.	Resources.	Deposits.	Loans and Discounts.
National	19	$2,713,000.00	$16,703,819.22	$ 8,913,306.55	$ 9,885,847.23
State	143	6,332,871.70	34,546,296.71	20,521,824.92	26,566,093.15
Total	162	$9,045,871.70	$51,250,115.93	$29,435,131.47	$36,451,940.38
Private banks	9	$ 106,000.00	$ 720,132.92	$ 475,810.99	$ 570,311.14

On September 4, 1906, the loans and discounts of the National Banks in the State were given in the following summary of the National Bank situation in South Carolina: Number of banks, 25; on demand paper, with one or more in-

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dividual or firm names, $227,297; on demand, secured by stocks, bonds and other personal securities, $466,598; on time paper, with two or more individual or firm names, $6,011,717; on time, single name paper, without other security, $2,459,633; on time, secured by stocks, bonds and other personal securities, or on mortgages or other real estate security, $4,692,047; total, $13,857,292. It will be noted that there were 25 such banks against 19 in 1904.

The liabilities of the 25 national banks, November 12, 1906, were $23,418,420.14, the resources being in balance, showing loans and discounts at that time of $12,746,718.54.

On December 20, 1906, there were 204 State and private banks in the State against 152 such in 1904. They had resources amounting to $46,870,821.80, with $30,909,032.51 in loans and discounts. This was a decrease, from the summer preceding, in loans and discounts of nearly five millions.

The capital invested in banking most materially increased during the period from 1904 to the end of the year 1906.

Remarkable Advance in Agriculture in 1907.—Since the tables showing the several crops, appearing in the chapter on agriculture, were printed, returns for the principal crops excepting cotton have been received, and they are given herewith as they show the remarkable advance made during 1907 just closed in diversified agriculture. The effect of the general application of the Williamson corn planting method, and the winning of the National Corn Contest prize by Mr. Tindal by the employment of intelligent methods of cultivation is reflected in the results obtained with the 1907 corn crop. That with practically no increased acreage the yield of corn in the State per acre should have been increased from 8 to 15 bushels per acre, that the production should have been increased 6,195,767 bushels and the value in round figures $6,012,800. is a practical demonstration, the value of which can scarcely be calculated. The figures speak for themselves:

Yield Per Acre.	S. C. 1906.	S. C. 1907.	U. S. 1907.
Corn (bu.)	8.91	15.1	25.9
Wheat (bu.)	10.23	8.5	14.6
Oats (bu.)	10.54	20.0	23.7
Potatoes (bu.)	86.10	70.	95.4
Tobacco (lbs.)	670.	900.	850.5

TABLE SHOWING ACREAGE, PRODUCTION AND VALUE.

	Acreage.		Production.		Value.	
	1906.	1907.	1906.	1907.	1906.	1907.
Corn (bu.)	1,935,347	1,974,000	23,611,233	29,807,000	$17,236,200	$23,249,000
Hay (tons)	60,682	60,682	88,596	92,000	1,351,089	1,518,000
Wheat (bu.)	318,284	314,284	2,960,041	2,669,000	3,256,045	3,203,000
Oats (bu.)	191,259	195,000	3,538,292	3,900,000	2,016,826	2,808,000
Tobacco (lbs.)	13,400	27,000	8,978,000	20,070,000	942,690	2,795,000
Irish P'o's (bu.)	9,065	9,065	743,330	630,000	780,496	693,000
Rye (bu.)	4,015	4,226	34,128	38,000	42,660	48,000
Total	2,532,052	2,584,257			$25,526,006	$34,314,000

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TRAVEL DISTANCES IN MILES BETWEEN ALL CITIES AND TOWNS OF OVER 2,000 POPULATION.

	Abbeville.	Aiken.	Anderson.	Beaufort.	Camden.	Charleston.	Chester.	Columbia.	Darlington.	Florence.	Gaffney.	Georgetown.	Greenville.	Greenwood.	Laurens.	Mt. Pleasant.	Newberry.	Orangeburg.	Rock Hill.	Spartanburg.	Summerville.	Sumter.	Union.	Yorkville.
Abbeville		100	45	191	133	212	88	100	182	182	114	219	62	15	43	215	52	149	184	93	207	143	85	112
Aiken	100		120	114	107	121	139	74	156	156	189	193	219	85	113	124	117	75	161	151	99	117	140	162
Anderson	45	120		219	161	241	117	128	210	210	89	247	37	43	71	244	85	177	135	68	235	171	113	139
Beaufort	191	114	219		160	81	192	127	209	209	242	246	272	176	202	84	170	96	214	221	137	140	193	215
Camden	133	107	161	160		162	69	33	69	69	112	106	178	118	108	165	76	63	63	132	121	30	99	77
Charleston	212	121	241	81	162		194	129	112	102	274	90	274	214	204	3	172	80	225	223	22	130	195	239
Chester	88	139	117	192	69	194		65	138	138	57	184	93	73	56	197	69	114	19	58	172	99	30	23
Columbia	100	74	128	127	33	129	65	82	82	82	115	119	145	85	75	132	43	49	87	94	107	43	66	88
Darlington	182	156	210	209	69	112	138	82	10	10	181	112	227	167	157	115	125	83	132	176	134	39	142	146
Florence	182	156	210	209	69	102	138	82	10		181	102	227	167	157	105	125	83	132	176	124	39	142	146
Gaffney	114	189	89	242	112	174	57	115	112	181	218	218	52	87	57	277	91	175	48	21	233	142	49	34
Georgetown	219	193	247	246	106	90	184	119	112	102	218		264	204	194	93	162	120	169	213	112	76	185	183
Greenville	62	219	37	272	18	274	93	145	227	227	52	264		60	37	277	69	194	100	31	252	188	59	86
Greenwood	15	85	43	176	118	214	73	85	167	167	87	204	65		28	217	37	134	92	66	192	128	70	96
Laurens	43	113	71	202	108	204	56	75	157	157	57	194	37	28		207	32	124	75	38	82	118	52	79
Mt. Pleasant	215	124	244	84	165	3	197	132	115	105	277	93	277	217	207		175	83	228	226	25	133	198	242
Newberry	52	117	85	170	76	172	69	43	125	125	91	162	69	37	32	175		92	87	70	150	86	62	91
Orangeburg	149	75	177	96	63	80	114	49	83	83	175	120	194	134	124	83	92		126	143	58	44	115	140
Rock Hill	184	161	135	214	63	225	19	87	132	132	48	169	100	92	75	228	87	126		69	184	93	49	14
Spartanburg	93	151	68	221	132	223	58	94	176	176	21	213	31	66	38	226	70	143	69		201	137	28	55
Summerville	207	99	235	137	121	22	172	107	134	124	233	112	252	192	182	25	150	58	184	201		108	173	195
Sumter	143	117	171	140	30	130	99	43	39	39	142	76	188	128	118	133	86	44	93	137	108		150	107
Union	85	113	193	99	99	195	30	66	142	142	49	185	59	70	52	198	62	115	49	28	173	150		53
Yorkville	112	162	139	215	77	239	23	88	146	146	34	183	86	96	79	242	91	140	14	55	195	107	53	

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Chapter XIX.

The State at Expositions and Handbooks

As early as 1880 the State of South Carolina recognized the importance of expositions as a means of advertising the resources of the State as an Act directing that such illustrative exhibits should be made "whenever practicable before international or State expositions." Under the direction of the Commissioner of Agriculture, two such exhibits were made, one at the International Cotton Exposition at Atlanta in 1881, and the other at the World's Fair in 1884-5. The exhibit at Atlanta reflected great credit on the State, capturing the first premium for the display of phosphates and the second premium for its agricultural display. The cost of the exhibit at Atlanta was $2,178.06. The exhibit at New Orleans was a very much more elaborate one, and it was universally deemed to be one of the largest, most comprehensive and striking displays gotten up by any State. This exhibit cost $10,000. In connection with both of the exhibits, numerous documents relating to the State were distributed. After the close of the exposition at New Orleans the South Carolina exhibit was taken to Charleston and erected in the hall of the Agricultural Society, forming the main feature of this Society's annual industrial exposition. It was

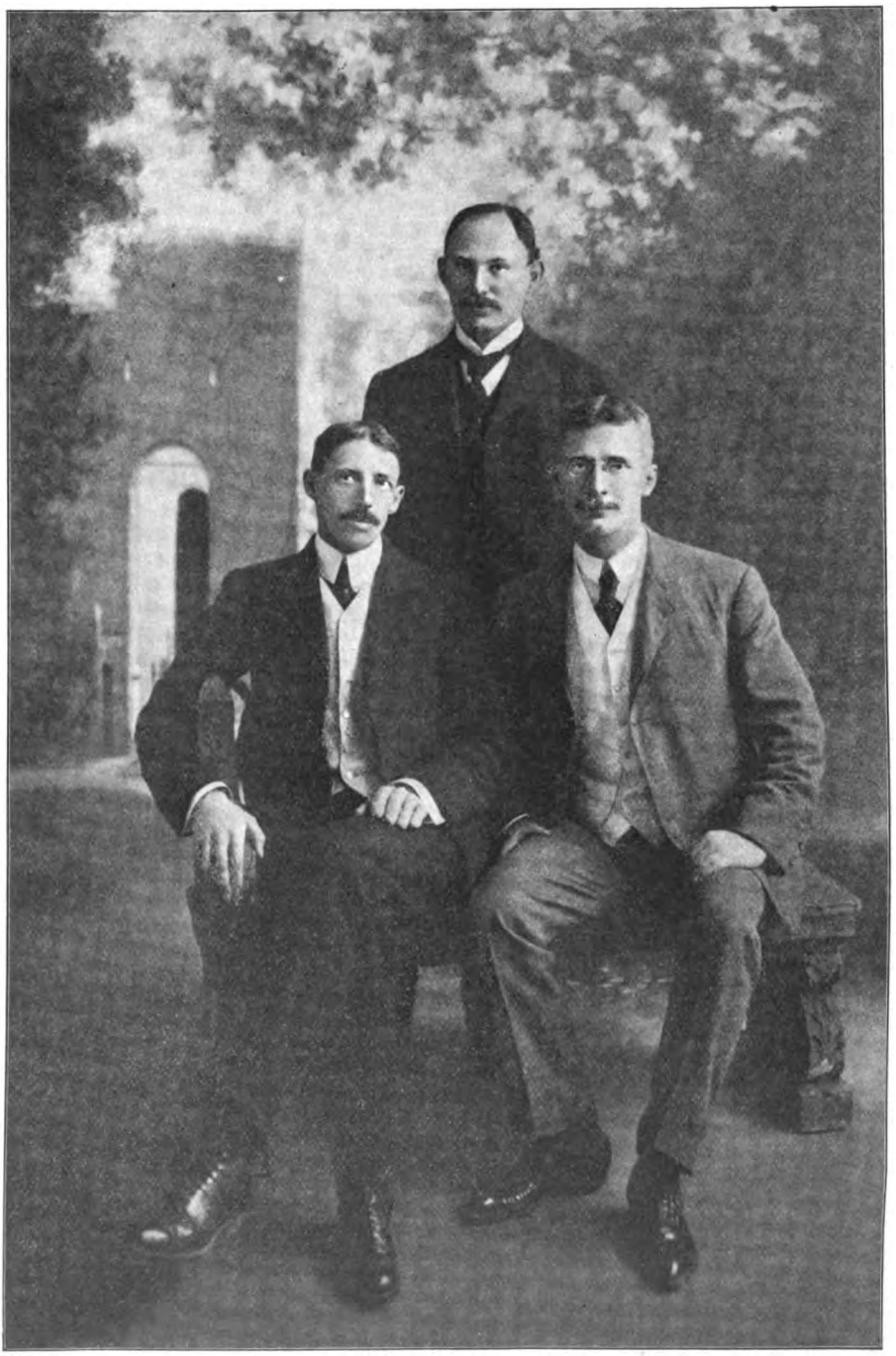


AT THE JAMESTOWN EXPOSITION SITE BEFORE THE OPENING.

then taken to Columbia and kept, until Clemson College was founded, on the first floor of the Agricultural Hall building on Main street, where it was constantly visited by people from all parts of the country. After the Agricultural Department was abolished, and the building put to other purposes, the exhibit was transferred to Clemson College, and there, in the early days of that institution, was destroyed when the building containing it was burned.

South Carolina did not take part in the World's Fairs at Chicago, Buffalo or St. Louis, or at any of the International Fairs held in Europe. It was not until the Charleston Exposition in Charleston in 1901-2 that the State again took part in such an undertaking. At this exposition provision was made for a handsome State Building, and the State Commission provided a most attractive exhibit. There was expended for this purpose some $50,000. After the Charleston exhibition a great deal of the property going to make up the State exhibit was stored in various places in Charleston, and a still larger proportion was sent back to those who had contributed to the making up of the exhibit.

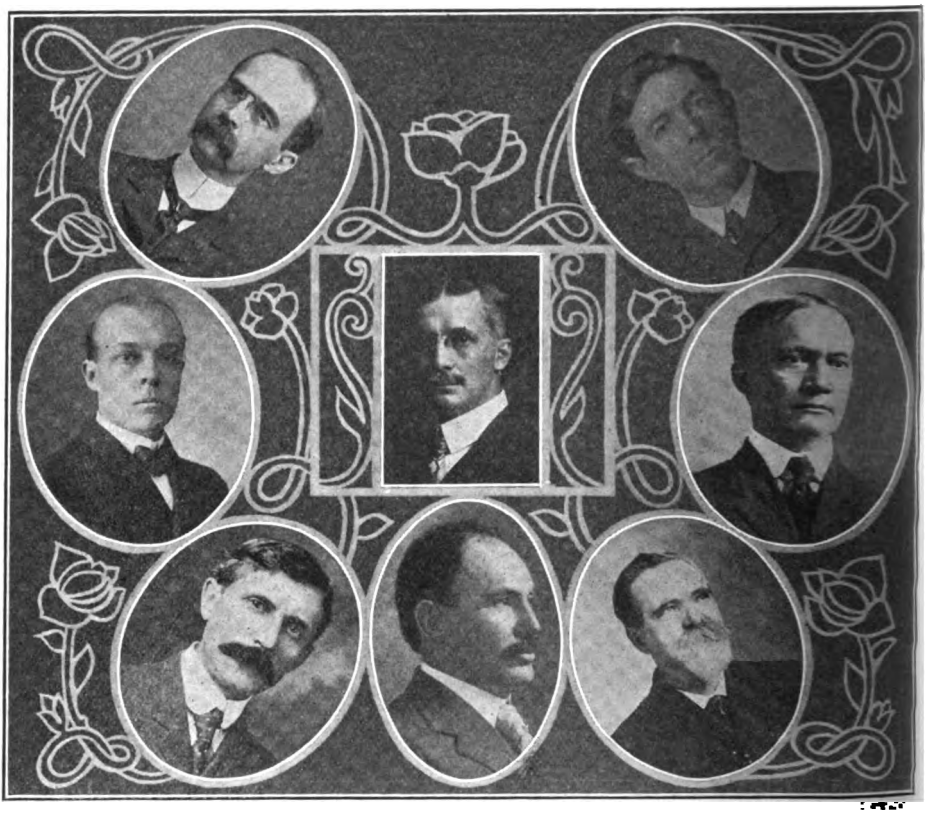
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CHAIRMAN GONZALES AND SECRETARY KOHN, OF THE COMMISSION, AND COMMISSIONER OF AGRICULTURE WATSON AT JAMESTOWN BEFORE THE EXPOSITION.

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Some years later, in the year 1904, the Legislature placed the residue of the exposition fund, some $1,500, and a few remaining bits of exhibit property, in the custody of the Commissioner of Agriculture, Commerce and Immigration, who collected all of the individual displays that could be found and assembled them at Columbia in the main building of the State Agricultural and Mechanical Society, loaned for the purpose. Several months were spent in adding to and increasing this exhibit of the resources of the State, and requests from the Commissioner met with a hearty response from manufacturers and others throughout the State, resulting in the securing of very valuable exhibit property at very little cost to the State. The General Assembly, at its session of 1906, passed an Act making provision for South Carolina to have a first-class



THE JAMESTOWN EXPOSITION COMMISSION.

J. E. NORMENT	W. E. GONZALES Chief Commissioner	JOHN G. RICHARDS
THOS. R. WARING		E. MARION RUCKER
FRANK EVANS	AUGUST KOHN Secretary	J. B. BLACK

exhibit at the Jamestown Ter-Centennial Exposition, to be held on or near the waters of Hampton Roads, near Norfolk, in the year 1907, in commemoration of the first permanent settlement made in the United States by the English-speaking people in the year 1607. The Legislature provided for a State Commission consisting of seven persons, one from each Congressional District, for the purpose of preparing a proper exhibit of the resources of South Carolina to be displayed at this exposition. Twenty thousand dollars were appropriated by the Legislature for the carrying out of this work. The Commission was appointed by Gov. Heyward as follows: William E. Gonzales, Chief Commissioner, President; E. Marion Rucker, Vice-President; T. R. Waring, J. B. Black, Frank Evans, John G. Richards and J. E. Norment. August Kohn was elected Secretary and Treasurer of the Commission, and Paul V. Moore was

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SOUTH CAROLINA EXHIBIT AT JAMESTOWN EXPOSITION.



SECTION OF THE SOUTH CAROLINA EXHIBIT AT THE JAMESTOWN EXPOSITION.

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made manager of the exhibit. By legislative authority the Commissioner of Agriculture, Commerce and Immigration turned over to the Commission all of the exhibit property he had collected, making the groundwork of the display later made at the exposition. Manager Moore undertook immediately to embellish and enlarge the exhibit, with the result that when the exposition was opened in the spring of 1907, South Carolina was one of the few States that had her State exhibit ready for the opening, and it has been pronounced by competent judges to be one of the handsomest and most attractive displays that has ever been made by any State at any exposition. The exhibit has refletced great credit, not alone upon the State of South Carolina, but upon those who worked so earnestly to make it second to none at the exposition.



DISPLAY OF FRUITS, STATE EXHIBIT.

The exhibit finally won a large number of medals, and received commendations accorded to no other exhibit at the Exposition. It was returned to Columbia after the Exposition, and the General Assembly directed that the care of the property be placed in the hands of the State Agricultural and Mechanical Society, to which organization the unexpended portion of the original appropriation was also turned over.

HANDBOOKS OF THE STATE.

The first practical handbook of the State was one containing some 50 pages published in 1867 by John A. Wagener, at that time Commissioner of Immigration. It was printed in Charleston by Joseph Walker, and was a good epitome of the resources of the State of value to home-seekers. The facts as given in this handbook are all certified to by Gov. James L. Orr. It was not until 1882, when things had somewhat quieted down again in South Carolina,

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A SECTION OF SOUTH CAROLINA'S FINE EXHIBIT AT THE JAMESTOWN EXPOSITION.



SECTION OF THE SOUTH CAROLINA EXHIBIT AT THE JAMESTOWN EXPOSITION.

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that the crying need for a statistical and general handbook of South Carolina was felt, and it was this that caused the preparation and publication of the one real handbook that the State ever issued, composed of some 726 pages. It was printed in Charleston and published under the direction of A. P. Butler, Commissioner of Agriculture. Commissioner Butler, soon after the book was issued, spoke of it as follows: "The need for a publication of this character for supplying the information constantly sought for on these subjects was soon felt by the Department, particularly to enable it to respond to the resquests for information of persons seeking a field of investment for capital.

"The preparation of the work was entrusted to Major Henry Hammond, who was engaged in it for nearly three years, with the assistance of some of the ablest specialists in the South.

"The result of their labors, the handbook entitled 'South Carolina,' is justly regarded as one of the finest publications of the character ever issued by any State. It is a compendium of the State, and a brilliant exponent of the advantages she affords to capitalists and immigrants. It has been widely distributed in the United States and Europe. It is in the offices of the leading bankers and immigration agents of London and New York, and has been eagerly sought after by many of the leading public libraries. By the valuable synopsis it contains of the history and status of the bonded debt of the State, and by showing the ability of our people to meet their public obligations, it has doubtless afforded material assistance in maintaining and advancing the credit of the State. It would be scarcely going too far to say that there is hardly any question that can be propounded concerning the State that is not answered in its pages.

"Five thousand copies were issued. The total cost of compilation, printing, binding, engraving and printing six thousand geological maps was $12,583.61."

There having been no statistical publication at all in South Carolina since 1882, the Commissioner of Agriculture, Commerce and Immigration called the attention of the General Assembly to the crying need for such a publication, and at the session of 1906 an appropriation of $3,000 was made for the undertaking of the work of preparing and issuing a general handbook of the resources of the State. The difficult work progressed as rapidly as possible during the nine months of 1906, but it was impossible to complete the work before the end of the year, and the Legislature in 1907 continued the residue of the appropriation for the preceding year for this purpose, appropriating also again the sum of $3,000. With the assistance of those to whom acknowledgment is made elsewhere, it has been possible to issue this volume, which is not nearly so complete as it should be, but it may in some measure meet the constant demand for statistical information about South Carolina.

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APPENDIX

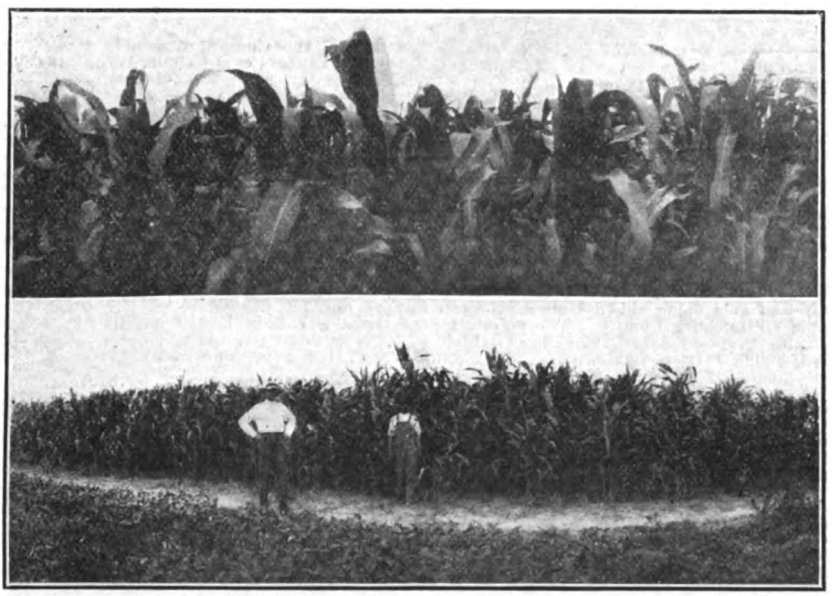
Being a Summary of 1908 Conditions and Statistics, and Other Facts not Elsewhere Incorporated

AGRICULTURE

This promises to be a splendid year for the agricultural development of the State. There is a most noteworthy revival of interest in agricultural subjects, and marked activity has been shown.

Farm Demonstration Work.—During 1907, as briefly mentioned elsewhere in this volume, the "Farm Demonstration Work" of the U. S. Bureau of Plant Industry, under the direction of Dr. S. A. Knapp, was inaugurated in South Carolina. It has been most favorably received, and in August, 1908, there are over 1,500 farms in South Carolina practicing seed selection and modern methods of farming under Federal Department direction with great benefit to the farmers in the several counties. The State Department, having induced the United States Government to start this work in South Carolina, is assisting the undertaking in every way possible. In one instance—that of the Gen. Sumter Memorial School—agricultural high school farm demonstration work has been inaugurated.

Of Wider Significance.—In the summer of 1908 the Bureau of Plant Industry determined to inaugurate a system of Farm Demonstration Work of even deeper significance,



VIEW OF ONE OF THE 1908 CORN CONTEST FIELDS.

upon purely practical lines, and South Carolina was the first State to be selected for this work, and so far is the only one. Practical demonstrations are given on selected experimental farms by the Bureau's experts in the utilization of improved machinery and application of most approved methods of farming, each demonstration being followed by meetings at which these experts explain in detail all the practical demonstrations made. The first meeting of this kind was held at the Gonzales farm near Columbia in August, 1908. Monthly demonstrations and meetings are to follow. Such farms are to be established in all parts of the State, and the high school educational work is not to be neglected, the Downer Institute at Beech Island being the first school to be chosen for this feature of the work.

Cattle Tick Eradication.—As a result of the efforts of Congressman Lever United States experts are now at work in all the Piedmont Counties in the effort to eradicate the cattle tick, and by the end of the year 1908 it is probable that most of the Piedmont Counties will be freed from the quarantine.

Seed Selection.—The year 1908 has witnessed great strides in the matter of seed selection of both cotton and corn. The State Department and the Federal Government have both distributed quantities of most carefully selected cotton seed, and splendid results are expected for the ensuing year.

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English Farmers.—During the spring and summer of 1908 the State Department has been successful, after several years of vigorous effort, to bring into the State quite a number of English farming and dairy people, fresh from the best agricultural sections of England, and in almost every instance these newcomers have done well.

The Right Kind.—Among those who have during 1908 come to make their home in South Carolina are three lineal descendants of John Alden, reputed to be the first of the passengers of the Mayflower to set his foot on Plymouth Rock (Mass.) in 1620. They own a beautiful farm near Columbia, and came from New Jersey.

Corn Growing Contest.—In the year 1908 a State Corn Growing Contest is in progress. Prizes have been provided for by the General Assembly, and most desirable results are anticipated. The contest is under the direction of a Commission consisting of the State Commissioner of Agriculture, the President of Clemson College, and the Professor of Agriculture at that institution.

Public Highway Connections.—During the year 1908 the Department of Agriculture, Commerce and Immigration, by direction of the General Assembly, is making a thorough investigation as to the practicability of reopening long abandoned ferries—or in lieu of ferries, erecting connecting bridges—with a view of providing convenient connections by public highways between the capital city and the eastern portion of the State, now absolutely separated by the Congaree and Wateree Rivers, except by rail. A full report, with recommendations, will be presented to the General Assembly at its next session. The re-establishment of such public highway connections promises much for the cause of agriculture.

Crop Reports.—The State Department of Agriculture issues, at regular intervals, crop reports, and at the proper seasons estimates of the cotton crop. On the 1907 crop, as early as November, an estimate was issued which fell only *13,498* bales short of the State's crop of *1,186,672* bales when the count was completed in the summer of 1908. The head of the Department, as President of the Southern States Association of Commissioners of Agriculture, in November, 1908, prepared the estimate on the South's cotton crop for 1907, and when the final count was made this estimate was only *109,957* bales different from the actual crop of *11,302,872* bales.

POLITICAL

Insurance Department.—At the session of 1908 of the General Assembly the State Insurance Department, with the office of State Insurance Commissioner, was created. The Commissioner is elected by the General Assembly and has full charge of all insurance matters. F. H. McMaster was elected Commissioner, and at once entered upon the discharge of his duties.

State Health Officer.—The General Assembly in 1908 created the office of State Health Officer, providing for the appointment of such officer by the Governor upon the recommendation of the Executive Committee of the State Board of Health. His salary is $2,500, and he holds office at the pleasure of the Executive Committee of the State Board of Health. His traveling expenses are also paid. Dr. C. F. Williams, of Columbia, formerly of the U. S. Army, was appointed in the spring of 1908 to fill this position. This officer is also Secretary of the State Board of Health. He has full powers in cases of epidemic and contagious diseases in all parts of the State and in the navigable waters of the State, and over water supplies, sewerage systems, etc.

New County of Calhoun.—At the 1908 session of the General Assembly the new County of Calhoun was formed with an area of 426.60 square miles, 62.55 square miles of this being taken from Lexington County and 364.05 square miles being taken from Orangeburg County. The population of the new county is 18,000. The assessed taxable property is $2,282,470, of which $2,192,470 has been taken from Orangeburg and $90,000 from Lexington. The boundaries of the new county are given in the accompanying map.

New State Officers.—In addition to the election of F. H. McMaster as State Insurance Commissioner, the appointment of C. F. Williams as State Health Officer, the reappointment for a term of four years of E. J. Watson as State Commissioner of Agriculture, Commerce and Immigration, the continuance in office of Earle Sloan as State Geologist, the appointment of Giles L. Wilson to succeed Lee G. Holleman, resigned, as State Bank Examiner, and continuance in office of W. B. West as State Dispensary Auditor, the State Democratic Primaries were held on August 25, resulting in the nomination of those named on inserted slip, such nomination being equivalent to election.

For the United States Senate in 1908 the race is for the purpose of filling the position formerly held by the late A. C. Latimer (died in 1908), whose unexpired term was filled by Frank B. Gary, who did not enter the race for the long term.

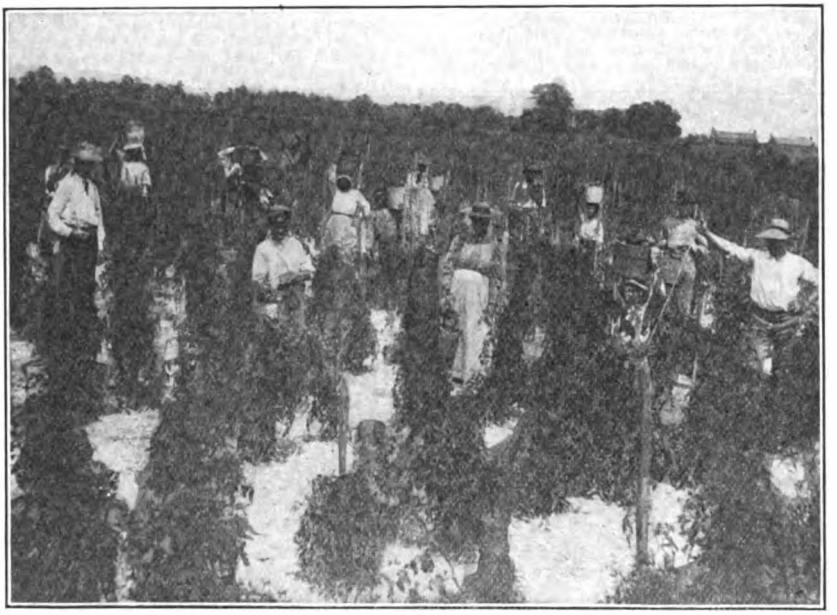
New Judicial Circuits.—At the 1908 session the General Assembly increased the number of Judicial Circuits to twelve, the boundary lines of which are given on the map in this volume, and set forth on page 33. The Circuit Judges at present are as follows: First Circuit, Chas. G. Dantzler, Orangeburg; term expires February 16, 1910. Second Circuit, Robert Aldrich, Barnwell; term expires February 16, 1910. Third Circuit, John S. Wilson, Manning; term expires December 6, 1910. Fourth Circuit, R. C. Watts, Cheraw; term expires February 14, 1910. Fifth Circuit, Ernest Gary, Columbia; term expires June 5, 1909. Sixth Circuit, Geo. W. Gage, Chester; term expires February 15, 1910. Seventh Circuit, D. E. Hydrick, Abbeville; term expires December 15, 1909. Eighth Circuit, J. C. Klugh, Abbeville; term expires December 22, 1910. Ninth Circuit, R. W. Memminger, Charleston; term expires February 17, 1909. Tenth Circuit, G. E. Prince, Anderson; term expires February 18, 1909. Eleventh Circuit, J. W. DeVore, Edgefield; term expires February 20, 1912. Twelfth Circuit, S. W. G. Shipp, Florence; term expires February 20, 1912.

The personnel of the State Supreme Court is as follows: Y. J. Pope, Chief Justice, Newberry, S. C.; term expires August 1, 1914. Eugene B. Gary, Associate Justice, Abbeville, S. C.; term expires August 1, 1916. Ira B. Jones, Associate Justice, Lancaster, S. C.; term expires July 31, 1910. C. A. Woods, Associate Justice, Marion, S. C.; term expires August 1, 1912.

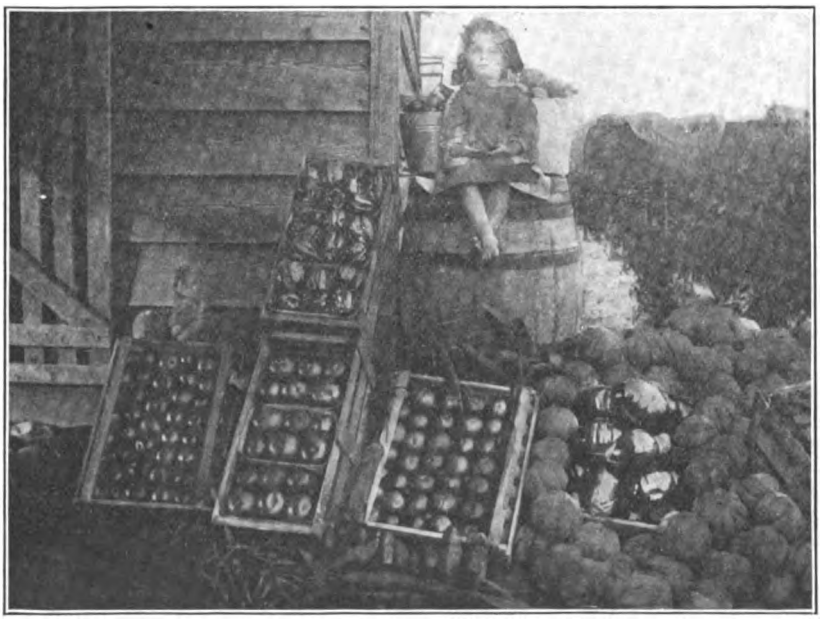
National Committeemen and Chairmen.—There has been no change in the personnel of the National Democratic and Republican Committeemen and State Chairmen in the year 1908.

A Record.—South Carolina has never gone Republican in Presidential elections except in the years 1868, 1872 and 1876—the period of Reconstruction.

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PICKING TOMATOES IN 1908 AT THE DUTCH FORK TRUCK FARM NEAR COLUMBIA.



A MORNING'S SUPPLY GATHERED ON THE SAME FARM.

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BIRD'S EYE VIEW OF GEORGETOWN HARBOR.

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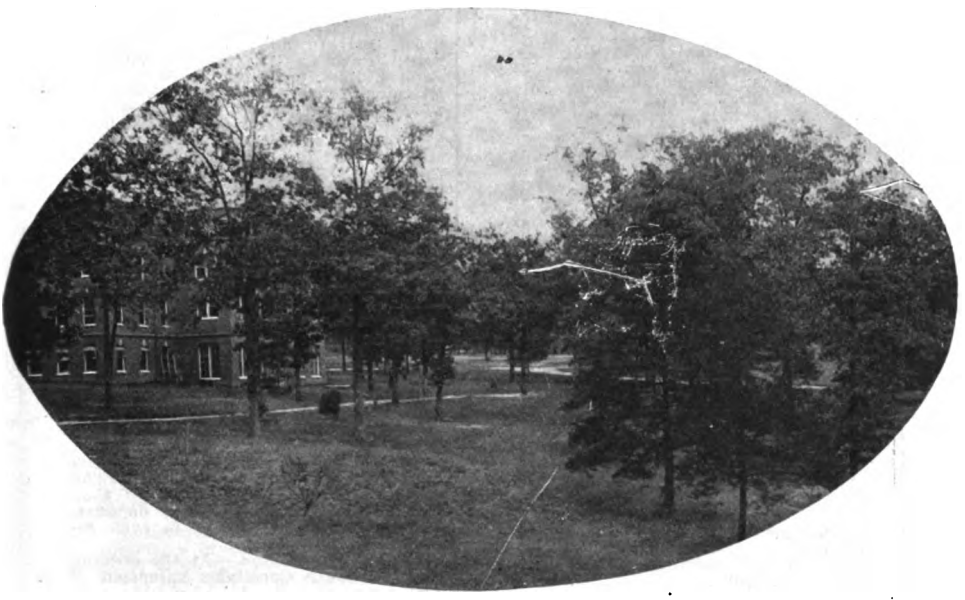
In the Consular Service.—In 1908 South Carolina is represented in the Consular Service of the United States by Herman L. Spahr, Consul at Breslau, Germany; T. Haynes, Consul-General at Singapore; and Julius D. Dreher, Consul-General at Tahiti, Society Islands (French Dominions).

The Only South Carolina Vice President.—The only South Carolinian ever elected Vice President (John C. Calhoun, 1782,) was of Scotch-Irish "paternal ancestry."

New Registration.—In 1908 the General Assembly, by an Act, provided for a re-registration for General Election purposes of all the qualified electors in South Carolina, such re-registration to take place during the year 1908. At this time this re-registration is in progress.

The Liquor Law.—South Carolina has amended its famous Dispensary Law and substituted what might be termed "local option by counties" under original dispensary regulations as to opening, and closing at sunset, and no drinking on the premises. It is "control by counties" under State "supervision." Seventeen counties have voted liquor out.

A Bit of History.—The first Secretary of the Treasury of the Confederate States of America was C. G. Memminger, of South Carolina (1861-64), who was succeeded by Geo. A. Trenholm (1864 only). These were the only Confederate cabinet officers from South Carolina.



CAMPUS VIEW AT CLEMSON COLLEGE.

NOTABLE EVENTS IN 1908

Infirmary for Confederate Veterans.—At the 1908 session the General Assembly made an appropriation for establishing and maintaining an Infirmary for Confederate Veterans, to be located on the property of the State, near Columbia, known as "the Bellevue Place on the Wallace Land." The establishment of this institution is in charge of a Commission consisting of five members, appointed by the Governor.

The Battleship "South Carolina."—A conspicuous event in 1908 has been the launching of the "South Carolina," the greatest battleship and fighting machine of the American navy at this time. She was launched at Cramps's shipyards, Philadelphia, in July, 1908, with appropriate ceremonies, attended by Governor Ansel and staff, and the Governor's daughter christened the great warship as she glided from the ways.

Death of General Capers.—Gen. Ellison Capers, of the Confederate Army and Bishop of the Diocese of South Carolina of the Episcopal Church, died in Columbia in the first half of the year and has been succeeded by Bishop W. A. Guerry, formerly Coadjutor. Bishop W. W. Duncan, of the Methodist Church, also died during 1908.

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BANKING

Early in 1908 State Bank Examiner Lee G. Holleman resigned his office to accept a bank position, and on the proper recommendation of the State Bankers' Association Giles L. Wilson was appointed to succeed him.

Notwithstanding the financial panic all over the United States, banking conditions and development have not suffered to any extent in South Carolina, as is amply demonstrated by the fact that fifteen new State, private and savings banks, with $600,000 capital, applied for charters, six others previously commissioned got their charters, increasing the $600,000 to $830,000, and nine increased their capital stock, giving a total of new capital put into such banks of $1,185,000. The detailed statement is given herewith. This does not take into consideration a new National bank at Greenville, a new National bank at Camden with $50,000 capital, a proposed increase of the capital of the Bank of Donalds from $16,400 to $25,000, a contemplated new bank at Gray Court with $20,000 capital, and a new National bank at Anderson with $100,000 capital.

NEW BANKS AND INCREASES TO AUG. 19, 1908.

Commissioned—	
Bank of Calhoun Falls, Calhoun Falls, Capital	$20,000
Peoples Savings Bank, Honea Path, Capital	75,000
County Savings Bank, Darlington, Capital	50,000
Bank of Parksville, Parksville, Capital	20,000
Citizens Bank, Blackstock, Capital	10,000
Ridgeway Savings Association, Ridgeway, Capital	20,000
The Peoples Bank, Florence, Capital	100,000
The Bank of Estill, Estill, Capital	25,000
The Peoples Bank of Clinton, Clinton, Capital	50,000
Bank of Pomaria, Pomaria, Capital	15,000
The Planters Bank, Orangeburg, Capital	50,000
The Metropolitan Savings Bank, Columbia, Capital	100,000
The Union Savings Bank, Columbia, Capital	25,000
The Peoples Bank, Campobello, Capital	15,000
The Citizens Savings Bank, Union, Capital	25,000
	$600,000
Chartered—	
The Citizens Bank, Fairfax, Capital	$15,000
The Farmers Bank, Johnston, Capital	25,000
The Planters Savings Bank, Greer, Capital	25,000
The Peoples Bank of Fountain Inn, Fountain Inn, Capital	15,000
Westminster Bank, Westminster, Capital	100,000
Peoples Bank, Woodruff, Capital	50,000
	$830,000
Increases of Capital—	
Peoples Bank of Anderson, Anderson	$150,000
Chicora Savings Bank, Pelzer	30,000
Peoples Bank of Ridge Spring, Ridge Spring	10,000
Bank of Fountain Inn, Fountain Inn	35,000
Citizens Bank, Honea Path	50,000
Bank of Bowman, Bowman	5,000
Bank of Timmonsville, Timmonsville	25,000
Commercial Bank, Camden	25,000
Carolina Trust Company, Spartanburg	25,000
	$1,185,000

A condensed statement of the 233 State, private and savings banks in South Carolina at close of business June 4, 1908, made by the State Bank Examiner, shows loans and discounts, $36,070,722; demand loans, $1,608,372; due from banks and bankers, $3,944,719; total cash, $1,496,954; capital stock paid in, $9,193,676; surplus fund, $1,559,163; undivided profits less current expenses and taxes paid, $2,854,744; due to banks and bankers, $533,972; individual deposits subject to check, $14,467,327; savings deposits, $11,067,454; total resources, $48,694,704. The loans and discounts have increased about $4,000,000 since January 1st, but the individual deposits have decreased and the savings deposits also.

The twenty-six National banks in South Carolina reported December 3, 1907, aggregate capital, $3,485,000; surplus and profits, $2,105,660; individual deposits, $11,365,942; loans, $14,184,771; and total resources, $40,604,486.

At the opening of the year 1908 there were in South Carolina 27,336 depositors in savings banks, $10,453,470 being the amount of their deposits, or an average of $382.40 to each depositor.

Property Valuation.—At the opening of 1908 South Carolina's valuation of real property was $130,516,016; personal, including railroads, $119,018,406; total, $249,534,422; per cent. of actual value, 50; tax rate per $1,000, $5; bonded debt, $6,520,416.

Interest Laws.—The legal rate of interest in South Carolina is 7 per cent.; the rate allowed by contract is 8 per cent. Statute of Limitations—Judgments, 20 years; notes, 6 years; open accounts, 6 years.

Pensioners.—In 1908 there were in South Carolina 2,044 Federal Government pensioners, a smaller number than in any of the original thirteen States.

Mount Vernon.—The founder of the Mount Vernon Ladies' Association of the Union in charge of the Washington estate at Mount Vernon, which was founded in 1854, was Miss Ann Pamela Cunningham, of South Carolina. She was first regent.

Secret Orders.—South Carolina has 8,688 Masons, and Jacob T. Barron, of Columbia, is the Grand Secretary; he is also Second Ceremonial Master of the national organization of the Nobles of the Mystic Shrine. South Carolina has 4,613 Odd Fellows and 10,829 Knights of Pythias.

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1908 REVIEW

Railroads.—In June the proposed South and Western Railroad, giving a direct connection with the coal fields, secured a charter to cover the construction of its projected line from Marion and Bostic, N. C., to Spartanburg. During the year 1908 the Southern Railway Company has acquired control of a railroad line, which places South Carolina much nearer to the coal fields of Virginia. It has been announced that the Chesterfield and Lancaster Railroad would, during 1907, construct its 25-mile extension from Cheraw to Pageland.

Public Improvements.—Throughout the State the year 1908 has witnessed wonderful headway in the matter of municipal improvements. Nearly all of the towns of any size are putting in concrete paving and sewerage systems, waterworks plants and gas works. The city of Anderson is constructing a complete gas plant; Chester is putting in new waterworks and cement pavements. Laurens is paving her streets; street paving has made wondeful headway at Union; Abbeville is building a new city hall at a cost of $60,000; Darlington is putting in a sewerage plant; Beaufort is putting in plant for waterworks and lights and is constructing a new city hall; Greenville is getting a new telephone equipment at a cost of $100,000, with wires under ground; work is about to begin on Sumter's new postoffice; Greenwood is spending $50,000 on street paving, and extensive paving contracts have been awarded in both Columbia and Charleston; the new United States Courthouse is being constructed in Greenville; Yorkville is putting in a telephone exchange connecting the county seat with the town of Clover; Yorkville is also putting in a sewerage system; and new courthouses are being constructed in Manning and St. Matthews.

Among other improvements not strictly municipal may be mentioned the Nurses' Home at Charleston, the improvements costing $15,000, and a $40,000 addition to the Hotel Jerome at Columbia. A new hotel has been constructed at Chick Springs at a cost of $50,000, and at several other points in the State new hotels are under construction. Greenville is to have a handsome new hostelry. Large tobacco warehouses are being constructed at Marion and Manning. The United States Government has awarded the contract for the construction of the new navy yard pier at Charleston at a cost of $81,000.

New Industries.—A large number of diversified industries have been started in different portions of the State during the year 1908. There have been a large number of new ginneries and steam laundries. A cigar box manufacturing company has been started in Charleston, a brick plant at Kinard's, cotton warehouses have been built in many portions of the State, a large company is being formed at Columbia to manufacture vitrified brick from a large deposit discovered near the city, the material of which is pronounced by the U. S. Government as being the strongest yet discovered in this country; a brick tile manufacturing company has been started in Laurens, the Pacolet Mining Company has been formed at Gaffney for the purpose of gold mining in that vicinity, a mattress and broom factory has been started at Kershaw, a basket and box factory at Darlington, a large fruit cannery in connection with the Palmetto Farms in Aiken, a tin shingle plant at Anderson, a box and crate factory at North Augusta, and the Claussen Gold Mining Company at Fort Mill, with $100,000 capital, has been formed to conduct gold mining near Fort Mill. Another important enterprise started during the year is that of the Clay Products Manufacturing Company of East Liverpool, Ohio, which company has purchased 160 acres of kaolin land in Aiken County and proposes to manufacture brick, sewer pipe, terra cotta, and plain and ornamental chinaware.

Commerce.—Considerable advance has been made during 1908 in the matter of the commerce of the State. A new coastwise steamship company has been put in operation from the port of Charleston, and the new Baltimore line, operating to Georgetown, has met with marked success. Cheraw and Camden are about ready for their river steamship connections with Georgetown; the Columbia and Georgetown line has been reorganized and is doing all of the business that its equipment permits, having brought with its successful operation a very considerable reduction in railroad rates. The exports of Georgtown in 1907 were $17,977, while the exports from Charleston amounted to $2,196,596.

Considerable progress has been made in the matter of opening the port of Charleston to direct exportation of crude cotton and cotton manufactured product. During the year a new cotton exporting firm, with $100,000 capital and agencies throughout the State, has been established for the purpose of pushing this business. It has been announced within the last few weeks that a new Trans-Atlantic steamship line, for the purpose of carrying crude cotton, is to be put into operation this fall from the port of Charleston; local capital is largely interested in the enterprise. In the meantime the work which has been in progress for several years, looking to the securing of a special Trans-Atlantic service from Charleston, is being vigorously prosecuted, and it is hoped that the negotiations now pending will be successful.

Phosphate Rock.—The amount of phosphate rock mined in South Carolina during the year 1907 was 262,198 long tons, or 11.4 per cent. of the total production of the United States. Tennessee mined about twice as much and the Florida production was 1,386,578 long tons. The year showed a considerable increase in the amount of rock mined as compared to the preceding year.

Sericulture.—There has been during 1908 considerable interest manifested in sericulture, from which it seems certain that an average return of $75 per acre is easily obtainable in South Carolina. The two colonies in this State that have undertaken this work seem to be doing well. The experiment at Winthrop College has been given up, however. The United States is at present importing about $61,000,000 worth of raw silk. If every farmer in South Carolina should raise $100 worth of silk each year this State alone would produce nearly one-tenth of the annual import of raw silk into the United States. If this were done by ten States the $61,000,000 now sent out of the country would remain in the United States. Most of this could be done by members of farmers' families. The Department of Agriculture expects, during 1908, to issue a special booklet on the subject of sericulture.

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EDUCATIONAL

New College Presidents.—Since the revised list of presidents and superintendents of the higher educational institutions was sent to press two additional changes have been made. Col. O. J. Bond succeeds Col. Asbury Coward, resigned, as Superintendent of the S. C. Military Academy, and Dr. Scherer having resigned the presidency of Newberry College, Prof. Henry Harms has been chosen to fill that position. Since 1907 also the Welsh Neck High School at Hartsville has been transformed into the Coker College for Women, at the same place. Dr. E. V. Baldy has been elected president and a full faculty has been chosen. This new woman's college begins its career on Sept. 30, 1908, with bright prospects.

During the year 1908 there has been considerable construction of new college and school buildings in all parts of the State. Among these may be mentioned the new auditorium building of South Carolina University, provided for by the Legislature; new professor's houses at the same institution, and the overhauling of all the old buildings of the University, the erection of a new club house at Clemson College, and a material addition to the engineering building at Clemson College, $50,000 worth of improvements upon the Presbyterian Theological Seminary at Columbia, the awarding of the contract for the construction of the South Carolina State Industrial School at Florence, $14,000 worth of improvements upon the Citadel Academy at Charleston, the erection of a new dormitory at Winthrop College at a cost of $60,000, the erection and completion of a $35,000 school building at Georgetown, and new public school buildings in a great many of the principal towns of the State.

MARLBORO MANUFACTURING COMPANY (Historical)

Recently the Department of Agriculture, Commerce and Immigration has obtained an exceedingly interesting account of the Marlboro Manufacturing Company and its plant at a spot now known as "Burnt Factory," four miles north of Bennettsville, in Marlboro County, which cotton factory was conspicuous about seventy-five years ago. The enterprise was never incorporated by the Legislature. In 1834 J. N. Williams, of Society Hill, John McQueen and W. T. Ellerbe, of Marlboro County, formed a partnership, purchased 800 acres of land near Crooked Creek, and formed a stock company under the name of "The Marlboro Mfg. Company." In June the company purchased a tract of land from Harris R. Adams. In August, 1834, work was commenced on the building and it was completed in 1835. It was equipped with two thousand spindles and eighty looms. There were three hundred and seventy-seven shares of capital stock at $100 each; of this stock Williams held 209, Ellerbe 78 and McQueen 90. The building was a large three-story wooden structure, 180 feet long and 90 feet wide. Looms were all on the first floor, the picker and spinning frames being on the other floors. The power was generated by an over-shot water wheel, which soon proved insufficient and the dam was raised. In September, 1838, by means of purchase of lands for storage from Joseph Bennett sufficient power was secured. The operatives were all slaves owned by the three men named, and taken from their several plantations. There were 75 of them, and most of them were women, boys and girls. An experienced superintendent from the North had charge of the mill. Thread from No. 6 to No. 12 was made, and Osnaburgs and homespun were made. No finer thread than No. 12 was made, as there was no sale for it. A great deal of thread was sold in the county and made into cloth by the people upon their hand-looms. Much of the manufactured cloth was sold to merchants and planters in the Peedee country, that sold to planters being used for making clothes for their slaves. Thread was put up in 5-pound packages and sold to people of the county at 15 cents a package; cloth brought 10 cents per yard. Cloth not used for home consumption was shipped to the Northern markets via the Peedee River and Georgetown, and thence by sailing vessels. The cotton used was raised in Marlboro and Darlington Counties. The mill was operated by the original owners from 1835 to June 15, 1844, when they sold to Meeken Townsend 287 shares, which left 90 shares of the original stock held by John McQueen. Townsend and McQueen operated the mill until April 25, 1850, when Mr. Townsend, by purchase, became the sole owner of the mill. In 1844 white labor took the place of slave labor, 50 being employed. With this new labor the mill prospered, manufacturing thread exclusively. In December, 1851, the mill was destroyed by fire from a spark originating in the cotton picker, and was never rebuilt. The insurance was small, and Mr. Townsend died on December 24, 1852, at a time when he was arranging to rebuild the mill. All efforts by others to rebuild it failed and the water power, for over 50 years, has been utilized in operating a corn and flour mill. It is noteworthy that this mill started just about the same time that the Saluda Manufacturing Company obtained its charter, which was December 17, 1834. None of the three original stockholders of the mill have any descendants living today in the Peedee section. John McQueen was a member of Congress for a number of years and left a son by his second marriage, who lives in Alabama. W. T. Ellerbe never married. John N. Williams left several children, but all of them are dead. For the information contained in this brief story of this interesting mill, which undoubtedly had a marked influence upon cotton growing in Marlboro County, an influence lasting until this day, the State is indebted to Mr. Henry T. Bouchier.

NEWSPAPERS

South Carolina has 162 newspapers and journals classed as such at this time (August, 1908). Considerable data on the history of journalism in the State is given in the chapter on Education, but some additional data since obtained will be of interest. This information is a "List of Periodicals Published in the City of Columbia, Compiled by John P. Thomas, Jr., April, 1896," and from it the following is taken:

"The South Carolina State Gazette and Columbian Advertiser, printed by D. and J. J. Faust, State Printers, corner Washington and Richardson streets. Published during the year 1801, and probably prior and subsequent to that year. Probably a weekly. This paper was probably the first newspaper published in Columbia. A copy of this paper dated Sept. 18, 1801, being No. 435, Vol. VIII, is in possession of John P. Thomas, Jr., of Columbia, S. C.* It is probable that this was the paper edited by

*The South Carolina University library has twenty-four numbers of this paper for 1806 and 1807.

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General Faust, and after the death of General Faust edited by his widow, who was Mrs. Sarah A. Faust, a sister of the late John Blake White and an aunt of Col. T. G. White, of Beaufort, S. C. It is said that Mrs. Faust was 'a strong-minded woman, who wielded a powerful pen.' Extract from an old copy: 'Subscription $3 per year due in advance. Advertisements will be inserted at 75 cents per square including 20 lines or less and continued at 40 cents per square for every subsequent insertion. Job printing must be paid for in advance. Letters to the editor must be prepaid or the postage will be charged against the writer.'

"'Carolina Telegraph,' 'Published weekly by David P. Hillhouse at his new office adjoining the house lately occupied by the Charleston Bank on Richardson street.' 1816-18—. Weekly.

"'The Times and Gazette,' 1816-1824. Weekly.

"'The Hive,' — — Landrum, editor, 1830.

"'The South Carolinian.'

Names of Publishers.	Names of Editors.	Duration.	Kind of Publication.
A. H. & Wm. Pemberton..	A. H. Pemberton..	1832-36	Weekly.
A. H. Pemberton..	A. H. Pemberton..	1845	Weekly.
A. G. Summer..	A. G. Summer..	1845-46	Weekly.
Summer & Carroll..	B. R. Carroll..	1847-48	Weekly.
Johnston & Cavis..	W. B. Johnston..	1848-52	Daily and Weekly.
Robt. W. Gibbes, M. D..	Robt. W. Gibbes, M. D..	1852-56	Daily and Weekly.
Robt. W. Gibbes, M. D..	Franklin Gaillard..	1859-61	*Daily and Tri-Weekly.
Robt. W. Gibbes, M. D..	Robt. W. Gibbes, M. D..	1861-63	Daily.
DeFontaine & Co..	F. G. DeFontaine, Henry Timrod..	1863-65	Daily.
Thomas & LaMotte..	J. P. Thomas, W. H. McCaw..	1872-73	Daily.

"'Columbia Banner,' Robert W. Gibbes, M. D., editor and publisher, 1861-6; weekly.

"'The Portfolio,' DeFontaine & Co., publishers; F. G. DeFontaine, editor; 1863-65; weekly; $30 per year.

"'The Southern Chronicle,' Sam'l. Weir, publisher; 1838-48.

"'The Telescope,' DuBose & Johnston, publishers; 1843-45.

"'The Palmetto State Banner,' J. C. Morgan, publisher; John G. Bowman and Jas. C. Carroll, editors; 1846-51; weekly.

"'The State Rights Republican,' J. C. Morgan, publisher; Jas. C. Carroll, editor; daily.

"'Temperance Advocate,' John G. Bowman, publisher and editor; 1847-50; weekly.

"'The Illustrated Family Friend,' Godman & Lyons, publishers; S. A. Godman, editor; 1848-50; weekly.

"'The Southern Light,' A. A. Haight & Co., publishers; 1849; daily.

"'The Daily Telegraph,' DeLeon & Darr, publishers; Edwin DeLeon, editor; 1848-49; daily. Dr. Edward Sill, publisher; W. B. Carlisle, editor; 1850; daily.

"'The Carolina Times,' Gyles, LaMotte & Greneker, publishers; James H. Gyles, editor; 1850-52; daily. Edward H. Britton, publisher, 1853-54; daily.

"'The South Carolina Agriculturalist,' Robert M. Stokes, publisher; R. J. Gage, editor; 1855-56; weekly.

"'The Southern Guardian,' Chas. P. Pelham, publisher; Chas. P. Pelham, editor; 1859-64; daily and weekly.

"'The Daily Phoenix,' Julian A. Selby, publisher; W. Gilmore Simms, editor; 1865; daily and weekly. Julian A. Selby, publisher; W. B. Johnston, editor; 1866-67. Julian A. Selby, publisher; Frank Elmore, editor; 1867-68. Julian A. Selby, publisher; John P. Thomas, editor; 1868-72. Julian A. Selby, publisher; W. H. McCaw, editor; 1872. Julian A. Selby, publisher; C. P. Pelham, editor; 1874. Julian A. Selby, publisher; H. Judge Moore, editor; 1874-76; daily and weekly.

"'The Union Herald,' Thad C. Andrews, publisher; L. Cass Carpenter, editor; 1868-76; daily and weekly.

"'The Southern Presbyterian,' Dr. James Woodrow, publisher and editor; 1866-92; weekly.

"'The Christian Neighbor,' The Rev. Sidi H. Browne, publisher and editor; 1868—; weekly.

"'The Palmetto Yeoman,' C. M. McJunkin, publisher; H. Judge Moore, editoir; 1878-84; evening daily.

"'The Daily Record,' H. N. Emlyn, publisher; Arthur C. Moore, editor; Aug., '85-Jan., '87. H. N. Emlyn, publisher; John S. Reynolds, editor; Jan., '87-Feb., '89. Record Co. (R. A. Lynch, Mgr.), publishers; Gibbs Gardiner, editor; Feb., 1889. Clayton & Yarrington, publishers; Clayton and Yarrington editors; 1889-Feb., 1890. Clayton & Yarrington, publishers; F. H. McMaster, editor; 1890. Record Pub'g. Co., publishers; O. N. Flanders, editor; 1891. Clayton & Yarrington, publishers; P. M. Brice, editor; 1891-93; evening daily.

"'The Evening Journal,' Journal Co. (H. P. Clark, Mgr.), publishers; John G. Capers, editor; 1893. The State Pub'g. Co., publishers; John S. Reynolds, editor; Sep., '93, to Feb., '94. The State Pub'g. Co., publishers; W. W. Ball, editor; Feb., '94, to July, '94. Ball & Boyd, publishers; W. W. Ball, editor; July, '94, to Dec., '94. Evening daily.

"'The Evening News,' The Evening News Co., publishers; Jan., '94, to '96; evening daily.

"'The Daily Register,' H. N. Emlyn, E. L. Forde, W. B. McDaniel, C. M. McJunkin, C. C. Tutt, O. F. Howell, F. H. Marks, publishers; H. N. Emlyn, C. P. Pelham, editors; July 28, '75-76. H. N. Emlyn, Jas. A. Hoyt, W. B. McDaniel and J. T. Wells, publishers; Jas. A. Hoyt and Jos. Dan'l. Pope, editors; 1876-78. Calvo & Patton, publishers; J. W. R. Pope, J. P. Thomas, editors; March, '78-96, C. M. Douglass, R. M. Davis (March, '78 to 1880), Charles A. Calvo (1880-1896), publisher; C. A. G. Jackson, T. L. Gantt, Geo. R. Koester, P. M. Brice, editors. Daily and weekly.

"'The State,' The State Pub'g. Co., publishers; N. G. Gonzales, editor; Feb. 18, 1891-1896. The State Co., publishers; N. G. Gonzales, editor; 1896-1903. The State Co., publishers; W. E. Gonzales, editor; 1903—to date. Daily and weekly.

*In 1861 subscription price of daily was $6 per year; Tri-Weekly $4.

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"'The Record,' The Record Publishing Co., publishers; Geo. R. Koester, P. M. Brice, H. A. Whitman, editors; 1897—to date."

ECCLESIASTICAL STATISTICS

An effort has been made to give in this volume as complete a census of the various white churches in South Carolina as possible. Nearly all of the statistics have been obtained with accuracy and considerable completeness. No reports have been received in regard to the Jewish people. Efforts were made also to get the statistics as to the Mormons in South Carolina, of whom there are a number in the Piedmont. The accompanying summary shows that the Baptists compose the leading denomination in the State, being closely followed by the Methodists. The figures as to the Christian Church and the French Huguenot Church have been unobtainable. The detailed statistics obtained are as follows, the first figure, where figures are given by counties, after the name of each county representing "number of churches," the second "number of ministers," and the third "total membership":

Summary of Church Statistics (White) for the State.—1908.

Denomination.	No. of Churches.	No. of Ministers.	Total Membership.
Baptist	1,008	410	118,217
M. E. Church, South	798	357	85,441
Presbyterian	275	121	23,442
Lutheran	85	34	13,993
Episcopal	94	47	7,620
Unitarian	1	1	117
Congregational	1	1	71
A. R. Presbyterian	45	36	4,227
Catholic	30	18	8,500
	2,382	1,025	261,628

Baptist Church.—It is impossible to give by counties the statistics of the Baptist Church, as the official records deal only with "Associations," of which there are 37; counties overlap in certain associations, and some associations embrace more than one county. The composition of the several associations is as follows: Abbeville Association, churches chiefly in Abbeville County; Aiken Association, churches chiefly in Aiken County; Barnwell Association, churches in Barnwell and Bamberg Counties; Beaverdam Association, churches in Oconee County; Black River Association, churches in Sumter and Clarendon Counties; Broad River Association, churches in Cherokee County; Charleston Association, churches in Charleston, Dorchester, Berkeley and Georgetown Counties; Chester Association, churches in Chester County; Chesterfield Association, churches in Chesterfield County; Colleton Association, churches in Colleton County; Dorchester Association, churches in Dorchester County; Edgefield Association, churches in Edgefield County; Edisto Association, churches in Aiken and Orangeburg Counties; Fairfield Association, churches in Richland and Fairfield Counties; Florence Association, churches in Florence County; Greenville Association, churches in Greenville County; Kershaw Association, churches in Kershaw County; Laurens Association, churches in Laurens County; Lexington Association, churches in Lexington County; Moriah Association, churches in Lancaster County; North Greenville Association, churches in Greenville County; Orangeburg Association, churches in Orangeburg and Calhoun Counties; Pee Dee Association, churches in Marion and Marlboro Counties; Pickens Association, churches in Pickens County; Piedmont Association, churches in Pickens and Anderson Counties; Reedy River Association, churches in Newberry County; Ridge Association, churches in Edgefield and Lexington Counties; Saluda Association, churches in Anderson County; Santee Association, churches in Sumter and Lee Counties; South East Association, churches in Williamsburg and Georgetown Counties; Spartanburg Association, churches in Spartanburg County; Union County Association, churches in Union County; Welsh Neck Association, churches in Darlington and Florence Counties; York Association, churches in York County; Savannah River Association, churches in Hampton and Beaufort Counties; Waccamaw Association, churches in Horry County; Twelve Mile River Association, churches in Pickens County. The following shows the number of churches, ministers and total membership by associations: Abbeville, 24, 5, 2,643; Aiken, 35, 16, 3,335; Barnwell, 37, 12, 4,714; Beaverdam, 41, 10, 3,822; Black River, 7, 4, 837; Broad River, 47, 21, 6,996; Charleston, 37, 11, 3,061; Chester, 16, 5, 1,762; Chesterfield, 25, 7, 2,505; Colleton, 23, 5, 2,948; Dorchester, 7, 4, 389; Edisto, 15, 4, 1,627; Edgefield, 20, 7, 2,618; Fairfield, 29, 12, 2,881; Florence, 13, 6, 1,970; Greenville, 40, 37, 7,138; Kershaw, 19, 5, 1,707; Laurens, 29, 10, 3,349; Lexington, 22, 9, 2,184; Moriah, 21, 6, 3,152; North Greenville, 30, 21, 4,936; Orangeburg, 31, 12, 3,592; Pee Dee 45, 13, 4,967; Pickens, 12, 3, 1,397; Piedmont, 21, 5, 2,690; Reedy River, 13, 4, 1,111; Ridge, 19, 13, 3,430; Saluda, 45, 16, 7,605; Santee, 22, 8, 2,599; South East, 33, 12, 2,272; Spartanburg, 46, 23, 8,319; Union, 21, 8, 2,240; Welsh Neck, 22, 10, 3,401; York, 14, 4, 1,335; Savannah River, 44, 15, 3,377; Twelve Mile River, 26, 13, 1,928; Waccamaw, 49, 34, 3,585. Total ministers 410; total churches 1,003; total membership 118,217. Total paid in pastors' salaries $172,741; total amount raised for State missions $22,757.30; total amount raised for home missions $17,163.90; total amount raised for foreign missions $31,188.80; total amount raised for orphanages $19,410.64; total amount raised for ministers' relief $5,503.78; total amount raised for education $12,362.22; total amount raised for miscellaneous church expenses $151,398.52; total amount raised for all purposes $432,526.16; value of all church property $1,797,441. Total Sunday schools 968; Sunday schools having larger roll than membership 132; Sunday school officers and teachers 6,354; total scholars 61,946. Baptist educational institutions: Furman University, Greenville, E. M. Poteat, president; organized 1851; instructors 11; students, male, 145; volumes in library, 4,500; value of endowment, $135,000; value of other property, $150,000; total property, $285,000. Furman Fitting School, Greenville, A. W. Honeycutt, G. S. Bryan, presidents; instructors, 3; students, male, 83; total value of property, $15,000. Greenville Female College, Greenville, E. C. James, president; organized 1854; instructors, 21; students, male 24, female 312, total 336; volumes in library, 1,200; total value of property, $90,000. Limestone College, Gaffney, Lee Davis Lodge, president; organized 1845;

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instructors, 15; students, female, 145; volumes in library, 4,000; total value of property, $125,000. North Greenville High School Tigerville, L. A. Jones, president; organized 1893; instructors, 4; students, male 75, female 45, total 120; value of endowment, $100; value of other property, $8,000; total value of property, $8,100. Orangeburg Collegiate Institute. Orangeburg, W. S. Peterson, president; organized 1894; instructors, 13; students, male 48, female 80, total 128; volumes in library, 250; total value of property, $30,000. Spartan High School, Landrum, H. L. Dean, president; organized 1906; instructors, 5; students, male 60, female 45, total 105; volumes in library, 150; total value of property, $15,000. Welsh Neck High School, Hartsville, R. W. Durrett, president; organized 1894; instructors, 9; students, male 60, female 50, total 110; value of endowment, $25,000 (subscribed); value of other property, $65,000; total value of property, $90,000. Totals, instructors, 81; students, male 495, female 677, total 1,172; volumes in library, 10,100; value of endowment, $160,100; value of other property, $498,000; total value of property, $658,100.

M. E. Church, South.—Abbeville, 20, 7, 2,628; Aiken, 18, 6, 1,306; Anderson, 35, 13, 3,313; Bamberg, 10, 3, 1,153; Barnwell, 8, 4, 1,029; Beaufort, 7, 2, 352; Berkeley, 23, 6, 1,758; Calhoun 17, 5, 2,005; Charleston, 10, 12, 2,474; Cherokee, 10, 4, 814; Chester, 17, 5, 1,820; Chesterfield, 17, 5, 1,725; Clarendon, 13, 5, 1,267; Colleton, 22, 9, 1,693; Darlington, 17, 7, 2,415; Dorchester, 17, 9, 1,935; Edgefield, 10, 3, 703; Fairfield, 16, 4, 1,110; Florence, 17, 5, 1,670; Georgetown, 17, 5, 1,313; Greenville, 25, 14, 3,432; Greenwood, 20, 10, 1,898; Hampton, 14, 3, 831; Horry, 33, 17, 2,362; Kershaw, 9, 3, 767; Lancaster, 14, 8, 2,460; Laurens, 24, 10, 2,864; Lee, 15, 6, 2,361; Lexington, 29, 15, 2,429; Marion, 34, 24, 4,524; Marlboro, 24, 9, 2,991; Newberry, 23, 7, 2,342; Oconee, 20, 5, 1,005; Orangeburg, 28, 16, 3,140; Pickens, 22, 4, 1,530; Richland, 14, 15, 2,368; Saluda, 9, 2, 1,207; Spartanburg, 38, 23, 4,576; Sumter, 15, 10, 1,910; Union, 20, 12, 2,612; Williamsburg, 28, 14, 2,346; York, 19, 12, 2,994. Totals, churches, 798; ministers, 357; total membership, 85,441.

Of the ministers, 236 are preachers in charge of churches; 12 are presiding elders in charge of districts; 10 are detailed for special work such as professorships, editorships, special agencies, and students; 21 are superannuated; 7 are supernumerary. In all there are 280 ministers on the regular Conference roll, and 77 local preachers, of which last 25 are now serving in charge of churches.

There are 50,000 enrolled in 681 Sunday schools; 1,701 enrolled in 51 Epworth Leagues.

The church buildings are valued at $1,500,000.00; parsonages $412,500.00; schools and colleges $573,000.00; school and college endowment $115,560.00.

The Methodists raised during 1907: For pastors' and presiding elders' salaries $197,044.00; for missions $44,170.61.

Catholic Church.—Bishops, 1; priests, 17; churches, 30; stations visited by priest, 75; chapels, 7; nuns and sisters, 91; academies for girls, 5; number of pupils in academies, 370; parochial schools, 8; pupils in parochial schools, 586; orphans cared for 71; hospitals, 1; Catholic population, 8,500.

Lutheran Church.—Aiken, 3, —, 390; Bamberg, 1, 1, 195; Barnwell, 1, —, 63; Berkeley, 1, 2 (professors in theological seminary), 21; Calhoun, 3, 2, 303; Charleston, 4, 4, 1,742; Dorchester, —, 1, —; Edgefield, 1, 1, 69; Florence, 1, 1, 42; Greenwood, 1, —, 19; Lexington, 38, 11, 4,185; Newberry, 16, 7, 2,990; Oconee, 1, 1, 200; Orangeburg, 5, 3, 450; Richland, 5, 3, 789; Saluda, 4, 2, 443; Spartanburg, 1, 1, 70; Sumter, 1, 1, 95; Totals, churches 85; ministers, 34; total membership, 13,993. No churches or membership in counties omitted. Sunday school officers and teachers, 699; number of Sunday school scholars, 5,128; value of churches, $269,885; value of parsonages, $73,179; value of all church property, $356,314; total expenditures, including salaries, $42,895.30; total beneficence, $18,024.63.

Presbyterian Church.—Abbeville, 14, 5, 1,351; Aiken, 3, 0, 155; Anderson, 18, 6, 1,505; Bamberg, 2, 0, 25; Barnwell, 4, 0, 43; Calhoun, 1, 0, 26; Charleston, 8, 6, 1,208; Cherokee, 3, 1, 169; Chester, 10, 4, 1,180; Chesterfield, 8, 3, 435; Clarendon, 8, 3, 444; Colleton, 2, 1, 70; Darlington, 3, 3, 314; Dorchester, 2, 1, 103; Edgefield, 4, 1, 93; Fairfield, 8, 4, 637; Florence, 5, 2, 489; Georgetown, 1, 1, 62; Greenville, 10, 7, 1,508; Greenwood, 6, 4, 519; Hampton, 3, 0, 94; Horry, 3, 1, 100; Kershaw, 7, 1, 437; Lancaster, 11, 5, 807; Laurens, 17, 7, 1,398; Lee, 3, 3, 304; Lexington, 2, 0, 36; Marion, 11, 2, 636; Marlboro, 5, 4, 339; Newberry, 4, 2, 296; Oconee, 13, 5, 593; Orangeburg, 1, 1, 123; Pickens, 6, 2, 311; Richland, 3, 6, 804; Saluda, 1, 0, 12; Spartanburg, 20, 8, 1,546; Sumter, 12, 7, 1,219; Union, 8, 3, 412; Williamsburg, 5, 1, 475; York, 20, 11, 3,155. Totals, churches, 275; ministers, 121; total membership, 23,442. Presbyterian Sunday schools in South Carolina: Number, 193; teachers and officers, 1,825; number of scholars, 14,050. Presbyterian schools and colleges in the State: Columbia Theological Seminary, value of property $95,000, endowment $225,000; Presbyterian College of South Carolina (male) at Clinton, S. C., value of property $91,000, endowment $30,000; Chicora College for Women, Greenville, S. C., value of property $65,000; Presbyterian High School, Florence, S. C., value of property $12,800; Clifford Seminary (private), Union, S. C., value of property $20,000; Thornwell Orphanage, Clinton, S. C., value of property $180,000, endowment $90,000. Salaries paid ministers $93,000; missions: foreign $30,500; home $13,275; colored evangelization $1,050.

Episcopal Church.—Abbeville, 3, 1, 88; Aiken, 2, 1, 165; Anderson, 2, 1, 138; Barnwell, 3, 1, 98; Beaufort, 5, 3, 221; Berkeley, 4, 1, 113; Calhoun, 1, —, 21; Charleston, 15, 10, 2,764; Cherokee, 2, —, 12; Chester, 1, —, 27; Chesterfield, 1, 1, 142; Clarendon, 2, 1, 58; Colleton, 2, 1, 153; Darlington, 3, 1, 98; Dorchester, 2, 1, 160; Edgefield, 2, 1, 92; Fairfield, 2, 1, 76; Florence, 3, 1, 226; Georgetown, 4, 2, 167; Greenville, 3, 1, 485; Greenwood, 3, 1, 59; Hampton, 3, 1, 76; Kershaw, 2, 1, 177; Lancaster, 1, —, 13; Laurens, 1, 1, 18; Lee, 1, —, 12; Marion, 1, 1, 70; Marlboro, 1, —, 26; Newberry, 1, —, 24; Oconee, 1, 1, 60; Orangeburg, 1, 1, 81; Richland, 7, 5, 984; Saluda, 1, —, 16; Spartanburg, 2, 1, 284; Sumter, 2, 2, 94; Union, 1, 1, 44; Williamsburg, 1, —, 22; York, 2, 2, 95. Totals, churches, 94; ministers, 47; total membership, 7,620. By "members" above is meant "communicants." Ministers often serve more than one church. Annual current expenses for the church in the State, $53,222.87; general missions, $4,889.15.

A. R. P. Church.—Abbeville, 5, 11, 525; Anderson, 4, 2, 198; Chester, 4, 3, 551; Fairfield, 4, 2, 305; Greenwood, 2, 2, 193; Lancaster, 5, 2, 325; Laurens, 3, 2, 172; Newberry, 5, 3, 300; Richland, 1, 1, 160; Spartanburg, 2, 2, 114; York, 10, 6, 1,384. Totals, churches, 45; ministers, 36; total membership, 4,227. Teachers in Sabbath schools, 386; pupils in Sabbath schools, 2,529.

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Unitarian Church.—There is only one church in the State, and it is at Charleston. This church has a minister and 75 total membership. About 8 Unitarian families reside in Greenville, and in Richland there are 8 or 10 Unitarians. Scattered throughout the State are many Unitarians, hardly a county in which there is not one or more. Charleston is the only place where there is a church with a settled minister. This church was organized in 1817, being one of the oldest in the United States. The present minister is the Rev. Clifton L. Gray.

Congregational Church.—The only "Independent or Congregational Church" in the State is in Charleston. It is in charge of a minister and has 71 members.

The total number of Sunday schools in South Carolina of all denominations, white and colored, is 6,126, with 35,050 teachers and officers, and 339,636 scholars.

Salvation Army.—This organization is doing a great work among the poor in the four counties in which it is operating—Charleston, Greenville, Richland, and Spartanburg. In Charleston the Army has a hall, and the force consists of three officers and twenty "soldiers." In Greenville the Army owns a good two-story building on Broad Street and a large Rescue Home on Railroad Street. In Richland, in the city of Columbia, the Army has two halls, in charge of four officers and twenty-three "soldiers." In Spartanburg the Army has a hall and hotel, in charge of four officers and twenty-five "soldiers."

HEALTH RECORD

Dispatch from Washington, August 23, 1908, to the Charleston News and Courier:

Some interesting comparisons are made between health conditions in the Southern States and elsewhere in today's issue of the Public Health and Marine Hospital Service Report. These figures are more than ordinarily interesting, especially when the fact is taken into consideration that South Carolina, with a very large proportion of its population colored, shows a smaller per capita death rate for the time under consideration than New York State, which has some negroes, and Minnesota, which has practically none.

Based on the census of 1900, South Carolina had a population of 1,340,316, Minnesota, 1,575,394, and New York, 7,268,012. The number of deaths in Minnesota for the month of April, 1908, during which time there was no epidemic there, was 1,738; for New York, for the month of June, 9,923, and for South Carolina, for the same month, only 238, and for April 278. It will be seen from this statement that Minnesota, with only 400,000 more people than South Carolina, has to its credit almost 1,500 more deaths for the time under consideration.

The 10,000 deaths that occurred in New York during the month of June corresponded to an annual death rate of 13.9 per cent. per 1,000 of the population.

These figures are taken at random simply for the purpose of showing South Carolina's small death rate, even with her large negro population, when compared with one of the Eastern and one of the Western States.

The report of the South Carolina authorities, showing the condition of the public health at this time there, is as follows:

Month of January, 1908: Total number of deaths, 251, including diphtheria 1, enteric fever 11, whooping cough 3, and 45 from tuberculosis. Cases: Diphtheria 27, enteric fever 44, measles 777, scarlet fever 82, smallpox 49, and tuberculosis 235.

Month of February, 1908: Total number of deaths, 245, including enteric fever 2, measles 4, whooping cough 1, and 25 from tuberculosis. Cases: Diphtheria 13, enteric fever 38, measles 1,316, scarlet fever 33, smallpox 19, and tuberculosis 143.

Month of March, 1908: Total number of deaths, 264, including enteric fever 7, measles 4, whooping cough 1, and 49 from tuberculosis. Cases: Diphtheria 14, enteric fever 51, measles 1,308, scarlet fever 40, smallpox 58, and tuberculosis 217.

Month of April, 1908: Total number of deaths 278, including diphtheria 1, enteric fever 5, smallpox 1, whooping cough 3, and 49 from tuberculosis. Cases: Diphtheria 9, enteric fever 55, measles 1,251, scarlet fever 23, smallpox 15, and tuberculosis 163.

Month of May, 1908: Total number of deaths 278, including diphtheria 1, enteric fever 10, measles 3, whooping cough 6, and 46 from tuberculosis. Cases: Diphtheria 9, enteric fever 198, measles 599, scarlet fever 11, smallpox 17, and tuberculosis 168.

Month of June, 1908: Total number of deaths 238, including diphtheria 1, enteric fever 23, measles 3, whooping cough 6, and 31 from tuberculosis. Cases: Diphtheria 25, enteric fever 429, measles 350, scarlet fever 16, smallpox 12, and tuberculosis 186.

South Carolina's total deaths for the six months just mentioned were 1,554, while Minnesota had 1,738 in one month alone.

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INDEX.

A.

AGRICULTURE:
Area, 13.
Drainage area, 13.
Early, 16.
Agricultural College, 182.
(See Clemson College.)
General view, 236.
Acreage of crops (1907), 236.
Value of farm products (1907), 243.
Expenses of fertilizers (1907), 243.
Expenses of labor (1907), 243.
Neat cattle on farms (1907), 243.
Summary of values of agriculture and live stock, 237.
Farmers' institutes, 239.
Demonstration work, 241.
Summary of conditions, 241.
Annual cereal harvest, 241.
Diversified farming, 241.
Sheep raising, 243.
Alfalfa, 243, 342, 390
Culture and production, 342-344.
Reduction in size of farms, 243.
Relative value of crops, 243.
Percentage increase between 1900 and 1906, 243.
Average yield per acre of cotton on white and negro farms, 244.
General history, 244.
Corn and rice—early culture—peas and tobacco, 244-245.
Stock raising, 255.
Food crops for stock raising, 389-391.
Cotton, 247.
(See Cotton.)
Grains and cereals, 247.
Diversified crops, 249.
Improved methods, 249.
Use of fertilizers, 249.
Fence law, 249, 250.
Lien law, 250.
Negro in agriculture, 251-2.
Farms in South Carolina, 251.
Agricultural sections (Hammond), 251-5.
Wheat, statistics, 1880-1907, 256.
Oats, statistics, 1880-1907, 256.
Rye, statistics, 1880-1907, 257.
Hay, statistics, 1880-1907, 257.
Irish potatoes, 1880-1907, 258-315-363.
Sweet potatoes, 315-316-340-390.
Cowpeas, 390.
Yield of crops per acre, 259.
Value of farm property, 259.
Number and acreage of farms, 259.
Average value per acre crops, 260.
Soil survey, 260.
Education and good roads, 260.
Agricultural and clubs, 261.
Agricultural journals, 261.
General statistics of production in U. S. and S. C., percentages of increase and decrease, 263.
S. C. agricultural industry—summary, 264.
Farm demonstration work, 595.
Cattle tick, 595.
Seed selection, 595.
Corn growing contest, 596.
English farmers, 596.
Public highway connections, 596.
Crop reports, 596.
ACADEMIES:
(NOTE.—The references show origin and location, standard, enrolment and principals.)
Porter Military Academy, 210-212.
Catholic—
St. Angela's, 207, 231.
Ursuline Convent, 208, 231.
Sacred Heart, 208,231.
Mission School, 210, 231.
Academy, S. C. Military, 179.
Origin and location, 179.
Course of study, 179.
Graduates in service of Confederacy, 179.
Enrolment, 182.
Relative rank, 182.
Superintendents, 228.
Academy, Mt. Dearborn (adjunct of West Point), 175.
Academies, private, 173-175.
Armies in Confederate War (compara strength), 23.
Asylums for insane, early, 44-45.
(See Hospital for Insane, 43-65.)

B.

Babcock, Dr. J. W., 30-43-65.
Banking, 34-584, 600.
Barley, 263.
Beans, 315.
Beardslee, Admiral, 323.
Beeks, Miss Gertrude, 436-437.
Beresford, Mr., on early conditions, 10.
Blanket factory, 469.
Broom corn, 344.
Table of acreage and production, 344.
Broom factories, 344, 470.
Bermuda grass for grazing, 376, 389.
Buggy manufacture, 473.
Boat oars, 473.

C.

Capers, General, 599.
COMMERCE AND TRADE:
Early, 16-18.
Wonderful development, 25-26.
General treatment, 476-508.

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Congressional districts, map, 33.
CONSTITUTIONS:
John Locke's, 15.
State, of 1776, adopted, 21.
State, of 1790, 21.
State, of 1868, 21.
State, of 1895, 24, 30-35.
CHARITABLE AND PENAL INSTITUTIONS, 34.
Charities, public, 65.
CLIMATOLOGY, 12, 66-76.
Relation to agriculture, 73-74.
Cabbage culture, 315.
Cantaloupes, culture, 315.
Clover, red, culture, 316.
County, new, Calhoun, 596.
Cucumbers, culture, 315.
COLLEGES:
(NOTE.—The references show origin, location, organization, curriculum, enrolment and presidents.)
Clemson College, 182-228.
Textile department, 183.
Citadel Academy—
See S. C. Military Academy, 179.
College, Medical, of S. C., 187.
Colleges, Denominational—
Erskine College, 191-228.
Furman University, 192-228.
Wofford College, 192-229.
College of Charleston, 191-228.
Presbyterian College of S. C., 228-231.
Newberry College, 194-231.
Female Colleges—
Barhamville, 196.
Limestone Female College, 197, 229.
Columbia Female College, 198, 229.
Lander College, 199, 229.
Confederate Home College, 200, 230.
Clifford Seminary, 201, 230.
College for Women, 201, 229.
Converse College, 202, 229.
Chicora College, 202, 230.
Due West Female College, 203, 229.
Greenville College for Women, 203, 229.
Co-Educational Colleges, 224.
Leesville College, 206, 229.
S. C. Co-Educational Institute, 206, 229.
Negro Colleges—
State Colored College, 217, 231.
Avery Normal College, 218, 231.
Claflin University, 218, 231.
Benedict College, 218-219, 231.
Allen University, 219, 231.
Sterling Industrial College, 219-220, 231.
Harbison College, 220, 231.
Brainerd Institute, 220.
Lancaster Industrial and Normal Institute, 220.
Williams College, 220.
CHEESEMAKING, 380, 381, 391.
A new industry, 380.
Study of subject, 380.
Experimental factories, 380, 381.
Fine quality of products, 381.
Goats' and sheep's milk for cheese, 381.
Number of factories (1907), 378.
Church statistics, 604.
COMMERCE AND TRANSPORTATION:
General View and Early History, 475.
Governor Heyward's agency in re-establishment of commerce of S. C. ports, 475.
Navigable territory, 476.
Commerce, 1908, 601.
Natural heads of navigation, 476.
First navigation Act, 477.
The Santee Canal, 477.
Before railroads, 478.
Trans-Atlantic Navigation, 478.
Efforts in the 30's, 478-479.
McDuffie's advocacy, 480.
The war's effects, 481.
The latest effort, 481.
The key to the situation, 482.
Trans-Atlantic Service—
Efforts of State Department of Agriculture, Commerce and Immigration, 483.
Mr. W. L. Trenholm's views, 483-488.
Most recent efforts, 488-490.
Charleston's commanding position, 491.
A matchless harbor, 491.
The real advantage, 491-493.
Tramp service, 493.
Table imports, 1905-1906, 494.
Table imports and exports, year 1906, 494.
Coastwise Service—
The "Clyde" line steamers, 495.
The Georgetown lines, 495.
The River Service, 497.
Table domestic exports, Georgetown, 1800-1906, 499.
Table exports and imports, Beaufort, 1906, 499.
History of water system, 499-502.
Railroad Service—
S. C. fine railroad facilities, 503.
Table mileage of railroads, 1905-1907, 503.
Table estimated actual value of railroad property, 504.
Table mileage of railroads in operation, 1860-1907, 504.
Table street and electric railways, 1905, 504.
Table railroads and mileage, 1907, 505.
S. C. the pioneer, 505-507-508.
Committeemen, national, 596.
Consular service, 599.
IMMIGRATION:
General view, 509.
South Carolina's invitation, 511.
The State's immigration agent of 1732, 511.
After the Civil War, 513.

Digitized by Google

The 1886 effort, 513.
Results of early efforts, 516.
The effort of 1903, 518.
The "selective" policy, 520.
Charleston made a Federal station, 520.
Practical results, 520.
Arrival of the "Wittekind," 520-523.
COTTON:
Production, 1886 to 1907, 263.
First shipment, 245.
Production and prices, 245.
Four bales per acre, 311-313.
The Story of King Cotton, 265.
General view, 265.
Value of crop, 265.
Prices of crop, 265.
Increase in acreage, 265.
History of cotton, 265-6.
Culture of cotton, 266.
Culture table, 266.
Value of crop, 269.
Table of values, 1899 to 1907, 269.
Table cotton crop for six years by counties, 269.
Table cotton crop statistics, upland and sea island, 271.
Table crop (bales) by years, 273.
Table condition, 273.
Table mean temperature, 273.
Table average rainfall, 273.
Table earliest killing frost, 273.
Table improving the staple, 275.
Sea Island Cotton, 275-283.
Character of the fibre, 275.
Origin and development, 275-280.
Handling the crop, 281.
Special packing, 283.
Cost per bale, 283.
Labor in ginnery, 283.
Crop of 1905, 283.
Acreage, 283.
Finest in the world, 283.
Cotton Seed Products, 283-4.
Table seed products, 1906, 283.
Cotton Culture, 284-287.
Cotton seed oil mills, 1907, 288-9.
Ginning, 398-399-400-401.
Cotton Manufacturing, 404-443.
Importance and magic growth, 404.
Mr. August Kohn's views, 404.
General statement of conditions, 405.
History, 405.
First cotton fabric manufactured, 1748, 407.
Development to 1790, 409.
First Arkwright mill in America, 409.
State aid in establishing cotton factories, 1795, 411-413.
Cotton picking machine, 1789, 412.
Homespun Co. of S. C., 1809, 412.
Industry in Piedmont Section, 413.
Opposition of Calhoun, Cheves, Jefferson and Randolph, 414.
Work begun by New England settlers, 414-415.
Mrs. M. P. Gridley, president Batesville factory, 415.
PRINCIPAL CITIES, 553.
General conditions, 553.
Table 1, population and manufacturing importance of principal S. C. towns, 554.
Table, population of four principal cities, 554.
Charleston, 554-556.
Columbia, 556-560.
Table showing growth of Columbia and Richland county, 556.
Table showing growth of Richland county in six years, 557.
Summary, 1907, with comparisons for 1890-1900, 557.
Roads, transportation facilities and river navigation, 558.
Banking capital and deposits, 558.
Cotton mills and other industries, 560.
Greenville, 560-561.
Population, 560.
Railroads, 560.
Property valuation, 561.
Cotton mills and other industries, 561.
Schools and colleges, 561.
Spartanburg, 561.
Population, property valuation, 561.
Location and improvements, 561.
Railroad connections, 561.
Educational center, 561.
"Greatest manufacturing county," 561.
County of largest white population, 561.
Second in wealth, 561.
Banking, 561.
Cotton mills and other industries, 562.
Newberry, 562.
Location, population and improvements, 562.
Artesian water supply, 562.
Religious and educational facilities, 562.
Garden truck region, 562.
Fiscal conditions, 562.
Sumter, 563.
Orangeburg, 564.
Rock Hill, 565.
Chester, 565.
Greenwood, 566.
Georgetown, 567.
Beaufort, 567.
Anderson, 568.
Florence, 569.
Union, 570.
Other towns, 570.
COUNTIES:
Statement showing the date of formation of each county, origin of name, county-seat, 572.
(Counties found arranged alphabetically in these pages.)
CORN, 255.

Digitized by Google

Improved culture, 247.
Table, 1880-1897, 256.
Table, production, 1860 to 1906, 263.
World's Record, 307.
The Parker yield of corn, 307.
Captain Drake's world record and method of culture, 307-8.
Second prize, Alfred Rose, of New York, 308.
Mr. A. J. Tindal's world record, 308.
Prof. Thos. Shaw's report, 308-311.
Second prize, A. J. Doore, Iowa, 308.
Third prize, B. E. Moore, S. C., 308.
W. B. Plyler, good crop, Lancaster, 316.
Williamson method, 316-320.
Remarkable advance, 585.

D.

DAIRYING, 12, 373-379.
Development, 373.
Table, milch cows, number, price, farm value, 373.
Prof. Rawls' views, 373-376.
Dairy farm near Aiken, 376.
Experiment under direction of U. S. government, 378.
Butter and cheese products, 378.
Number and value of milch cows on farms, 379.
Value of dairy products, 379.
Present conditions, 379.
Experiment in rations for milch cows, 399.
See, also, "Cheesemaking," 380-381.
Davis, R. Means, 165, 175-177.
Divorce, not allowed, 35.
Drainage area, 13-14.
Drainage commission, 14.
Drayton, Gov., 38-39, 176.

E.

EDUCATION, 34, 162-235.
Colonial period to Revolution, 163.
View of Gov. Nicholson, 164.
Free schools established, 164-165.
Period from Revolution to War of Secession, 165-168.
Recommendations of governors, 1812 to 1842, 167.
Report of Dr. Thornwell and Bishop Elliott, 167-168.
Appropriation for support, 168.
Real beginning of public school system, 168-169.
State and county officials, 169.
Negro schools and colleges, 172-173.
Academies, 173-175.
Colleges, 176.
University of South Carolina, 177.
Education of deaf, dumb and blind, 187, 189, 228.
Education, U. S. census statistics, school attendance, 235.
New presidents and institutions, 602.
Election system of S. C., 25-30.
EMIGRATION, 9.

F.

FOREWORD, 7.
Fullers earth, 122-3, 137-142.
Farmers' movement, 24.
Farmers' institutes, 239.
Farms in S. C., 251.
Fertilizers—
Expenses, 243.
Fertilizer companies (see cotton oil mills, 288-289.
Farm, value of property, 259.
Number and acreage of, 259.
Female Colleges, 196-204.
FRUIT GROWING, 349-51.
Pioneer fruit growers, 349.
Information for fruit growers, 349.
Tropical and sub-tropical fruits, 349-50.
Fruit growing in Chesterfield county, 351.
Area adapted to fruit growing, 351.
FORESTRY:
Important timber trees, 538.
Longleaf pine, 538.
Shortleaf pine, 538.
Loblolly pine, 538.
Cypress and juniper, 540.
Hardwoods, 542.
Table 1, rough lumber (by species), 1905, 542.
Table 2, lumber and timber products, 1900-1905, 544.
Table 3, logging camps, saw and planing mills, 1905, 545.
Table 4, shingles, cooperage and veneer, 546.
Table 5, value of lumber and timber products, 546.
Table 6, value of lumber and timber products, 546.
Table 7, standing timber owned by lumbermen, 1905, 547.
Annual cut of lumber, 547.
Fuel, 547.
Exhaustion of the supply, 548.
Possibilities, 548.
Forest legislation, 548.
Forest fires, 549.
Wasteful methods, 549.
Varied industries, 549.
Turpentine, 550.
Table 8, production of turpentine, 1900-1905, 550.
Table 9, chemical products of pine, 1906, 550.
Regulation of stream flow, 550.
Table 10, treeless and wooded area effects, 551.
Table 11, mills operated by water power, 551.
Appalachian national forests, 551.

G.

GEOLOGY AND MINERAL RESOURCES, 77-143.

Digitized by Google

Preface, 77.
Explanation of survey numbers and illustrations, 77.
Mineral production for the year 1906, 79.
General Geological Conditions—
Division I—
Chapter I, general subdivisions of crystalline region—petrographic zones: Chatooga, Chauga, Tunnel Hill, Poor Mt., Oconee Crk., Saluda, Anderson-Spartanburg, Cherokee, Abbeville-York, Edgefield-Chesterfield, Vaucluse, Hornsboro, 79.
Division II—
Chapter I, general subdivisions of coastal plain, 85.
Chapter II, cretaceous: lower Hamburg clays, upper Hamburg clays, Black Creek shales, Burches Ferry marl, 87.
Chapter III, tertiary: Black Mingo shales, Congaree shales, Warley Hill marl, Santee marl, Mt. Hope marl, Ashley-Cooper marls, 88.
Chapter IV, oligocene: King's Creek silex, Brier Creek marl, Combahee shale, Parachucla marl and shale, 91.
Chapter V, miocene: Mark's Head marl, Edisto marl and phosphate, Salkehatchie marl, Goose Creek marl, Pee Dee marl, Waccamaw (mio-pliocene), 91.
Chapter VI, pleistocene (fresh water): Cheraw cobbles and sands, Hampton clays, Ten-Mile sands; pleistocene (marine): Wadmalaw shell marl, Bohicket marl sands, Accabee gravels, 92.
Division III, Economic and Industrial—
Part I, Structural Materials—
Granite, 94.
Limestone, marble and dolomite, 97.
Slates, schists and shales, 100.
Quartz, 101.
Roadbuilding materials, 102.
Sands, 103.
Part II, Non-Metallic Group (Crystalline Region)—
Serpentine and Soapstone, 103.
Asbestos, 104.
Barytes, 104.
Monazite, 104.
Graphite, 104.
Mica and feldspar, 106.
Corundum, 107.
Gems and gem stones, 107.
Part III, Metallic Group—
Gold, 109.
Nickel, 114.
Copper, 115.
Tin, 116.
Lead, 117.
Manganese, 118.
Iron, 119.
Pyrite, 121.
Part IV, Non-Metallic Group (Coastal Plain)—
Marl and glauconite, 121.
Fullers earth, 122.
Peat, 123.
Sands, 124.
Phosphates, 125.
Clays, 127.
Map, 138-139.
Mining review for 1906, 140.
Geological formations, 86.
Glass works, 145.
Glass sand, 124.
Gonzales, N. G., 225.
Government of State:
Proprietary, 15.
Representation in General Assembly, 21-30.
McCrady's History, 26-39.
State officers, 28-31.
Governors, list of, 1760 to 1907, 36-38.
Goats and sheep, 387.
Table of wool product and value, 1880-1906, 387.
Table of sheep product and value, 1880-196, 387.
Grape fruit, 349.
Greenville (see Principal Cities, 560).

H.

Hampton, Wade, 1876, 23, 173, 182.
Hamomnd, Maj. Harry, 14, 240, 245, 250, 279, 281.
Hay, production, 1880 to 1907, 257.
Health, State officer, 596.
Health statistics, 606.
Heyward, ex-Gov. D. C., 475.
Historic chair, 48.
Hospital, Taylor Lane (colored), 219.
Hospital for Insane, 43-65.
Horticulture, 346-351.
Fruit belt, 346.
Ridge section, 346.
Other sections, 346-7.
The coastal region, 347.
Orange, banana, native grape, 347-9.
Earliest peach trees, 1670, 348.
Extensive peach orchards, 348.
Appless in Piedmont section, 348.
Vineyards, 348.
Hunting and Fishing:
Hunting preserves, 532.
Varieties of game, 532.
Every variety of fish, 532.
Commercial value, 534.
Game laws, 534.
Close season for game, 1902-1907, 584.
Export of game prohibited, 534.
Sale of game prohibited in open season, 534, 537.

I.

Immigration, 509-423.
Indian population, 15.

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Industries, new, 601.
Infirmary, Confederate, 599.
Interest, laws, 600.
Iron (see Mines and Mining), 119.
Insane, early provision for, 44-5.
(See Hospital for Insane).
Dorothy Dix fund, 59.
Numerical and financial table, 62-63.
Patients admitted, 1906, 64.
Pauper patients, counties and races, 65.
Insurance department, 596.
INFORMATION, GENERAL, 579.
Table, value of all porperty and of specified classes, 519.
Assessed value, 579.
Levy, 579.
Table, property owned by the State, 580.
Public debt, 580.
Present U. S. Senators and Representatives, 580.
Vote of State, 580.
South Carolina in national contests, 580.
Commercial business, 581.
Internal revenue collections, 581.
The first election, 581.
Table, State militia, officers and men, 583.
Political parties, 583.
U. S. Supreme Court jusitces, 583.
Federal judiciary in S. C., 583.
Other Federal officers, 583.
Pay of legislators, 583.
U. S. consuls, 583.
Pardon board, 583.
Distance and postal time, 583.
Dimensions of State, 583.
Ratification of Federal Constitution, 583.
Commerce, chamber, 583.
Camden, 584.
First theater in America, 584.
First insurance company, 584.
Legal holidays, 584.
Historic church, 584.
First monument to Confederate dead, 584.
Legal weights, 584.
The highest altitude, 584.
Monument at Chicamauga, 584.
Banking, 584-585.
Table, advance in agriculture in 1907, 585.
Table, distance in miles between cities and towns, 586.

J.

Japanese labor (see Silk Culture), 323.
Judicial circuits and judges, 596.
Judicial circuits, map, 33.

K.

Kelly, Miss H. A. (see Silk Culture), 322.
Kohn, August, 404-439.

L.

Latimer, death of, 596.
Lotteries, not allowed, 35.
Libraries—
State, 31.
Early, 163.
University of S. C., 179.
Charleston College, 190-1.
Erskine College, 191.
Lettuce, 315.
Liquor law, 599.
Lucas, Elizabeth (see Silk Culture, 321).
Lumber industry, 399-400, 402, 403.
(See Manufactures.)

M.

MANUFACTURES, GENERAL, 393-403.
A wonderful record, 393.
In the last two years, 392.
Leading industries, 392.
New industries, 392.
Corporate ownership, 392.
Value of products, 392-393.
Manufacturing in cities, 393.
Wage-earners, 393.
Horse power, 393.
Remarkable development, 393.
Table, rate of increase or decrease, 394.
Table, manufactures, 1850 to 1905, 396.
Early history, 396-397.
Substantial growth, 1882, 397.
Rank in decade 1800 to 1900, 397.
Cotton ginning, 398.
The Phosphate Industry, 398.
Fertilizer manufacturing, 398.
List of fertilizer plants, 1907, 398.
Fertilizers, 398.
Table 6, material used, kind, quality, cost and products, 399.
COTTON SEED INDUSTRY, 399-400.
Table 7, products, material used and value, 400.
Table, comparative summary of all manufactures, 400.
Lumber and timber, 401.
Table, sawed lumber, 402.
Planing mills, 402.
Table, seven leading industries, 403.
COTTON MANUFACTURING, 404.
Importance and development, 404.
Mr. Kohn's views, 404.
Its history, 405 to 421.
Early development, 421.
Wm. Gregg, Graniteville, 421 to 424.
Epoch periods, 424.
Mills in 1847, 424-427.
Table, mills in 1880, 427.
The real development, 427.
Table, consumption and production, 1850-1903, 430.
Increase from 1900 to 1905, 431.
Table A, cotton goods, material used, kind, quantity and cost, 1900-1905, 432.

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Table B, comparative summary and per cent. of increase, 1870-1905, 434.
Table, status of industry, 1905-1907, 435.
Children, 435.
Future, 435.
Labor, 436.
Welfare work of Presidents Parker and Smyth, 436.
Miss Gertrude Beeks' views, 436-437.
Marlboro Mfg. Co., 602.
President Parker's views, 437-438.
Mr. Kohn's recent investigations, 439.
Conditions compared, 442.
Attractiveness of mill life, 443.
Home life in mill villages, 443.
Thrift and health, 444.
Child labor, 444.
Schools and churches, 445.
Pleasures of life, 445.
Moral tone, 445.
Town builders, 445.
Turning to finer goods, 446.
Future labor, 448.
Wages, 449.
Table, average pay per operative, 449.
Table, wage-earners and wages paid, 1850 to 1907, 449.
Schools, 449.
Taxation of mills, 450.
Table, property assessed and taxes charged, 450.
Table, municipal taxes collected, 1906, 451.
General summary, 451.
Directory of S. C. cotton mills, 453 to 456.
Table, cotton mills in S. C., 1907, 457 to 464.
Table, new plants, 1907-8, 465.
Table, summary of S. C. textile industry, 467.
MANUFACTURING, SPECIAL:
Loom-reed and harness works, 498.
Bleachery, 49.
Table damask, 469.
Saw mills, 469.
Woolen blankets, 469.
Tanneries, 469.
Lime plant, 470.
Jute bagging, 470.
Aseptic laboratory, 470.
Metal workers, 470.
Telephone Manufacturing Co., 470.
Carriages and wagons, 470.
Table, number, capital, materials, value, 470.
Railroad repair shops, 470.
Table, number, capital, etc., 470.
Farming implements, 471.
Table, number, capital, materials, etc., 471.
Table, kind and value of products, 471.
Steam power used in State, 471.
Tables, electric, steam, water power, 471.
Clay ware, 471.
Flour and grist mills. 471.
Glass manufacturing, 472.
Canning and preserving, 472.
Veneer, 473.
Boat oars, 473.
Diversified industries, 473.
Table, summary of all manufactures, 474.
McDuffie, Gov., 480.
Mount Vernon, 600.

N.

Newspapers, list of, 225-226, 602-603.
NEGRO AND SLAVERY, 15-21.
First introduced, 15.
Slaveholders in 1860, 22.
Negroes in army (table), 1860-1865, 23.
Ex-Gov. Chamberlain and Prof. N. S. Shaler on relation of negroes and whites during the war, 23.
Care of insane, 57.
Colleges, 12-231.
Schools, 172.
Enrolment, 172.
Valuation of slaves, 247.
Negro in agriculture, 250.
Newberry (see Principal Cities, 562).

O.

OATS:
Table of production, 1880 to 1907, 256.
Table of production, 1886 to 1906, 263.
Record yield in 1882, 314-315.
Second prize in 1906, 314.
Large yield, Capt. White, Rock Hill, 316.
Oil mills, list of, 388-389.
Olives, 349.
Oranges, 349.
ORPHANAGES, 212-216.
(NOTE.—The refereaces which follow embrace names and location of orphanages, early history, course of study and training, enrolment, etc.)
Charleston Orphan House, 212, 230.
Thornwell Orphanage, 213, 230.
Connie Maxwell Orphanage, 214.
Epworth Orphanage, 214, 231.
DeLa Howe Orphanage, 215.
I. O. O. F. Orphanage, 215, 231.
Associate Reformed Presbyterian, 215.
Grand Lodge A. F. M., 215, 231.
Carroll (negro) Orphanage, 215, 231.

P.

Parker (see Manufactures).
Paupers in counties, 65.
Peas, cow, 345, 362, 366.
Pecan culture, 352.
Number of trees, production and value, 352.
Pensioners, Federal, 600.
Phosphate rock, 601.

Digitized by Google

POPULATION:
In 1860, 9.
Table I, population in S. C., 1670 to 1907, 524.
Table II, percentage of increase, 1670 to 1907, 525.
Table III, negro population, 525.
Table IV, movement of population of S. C. in the U. S. and from other countries, 526.
Table V, population by counties, 1700 to 1900, 527-528.
Table VI, population born in other States, 1900, 529.
Elements of population, early periods, 529.
Population, analysis, 531.
Publications of Department, 4.
Potatoes, Irish, production, 263, 315.
Potatoes, sweet, 315, 316, 340, 390.
Varieties most popular, 385.
POULTRY RAISING, 315, 382-386.
Rapid development, 382.
Pioneers of the industry, 382.
Products and markets, 382.
Table, number and value, 385.
Press (see Newspapers), 223-225.
Property, valuation, 600.
Public improvements, 601.

Q.

Quincy, Josiah, on Charleston in 1773, 18, 41.
Quarries, granite, list of, 140-141.

R.

Religion, early, 16.
Atheists, not allowed to hold office, 35.
Reconstruction period, 18, 21, 23.
After reconstruction, 24.
President Eliot's view, 23.
RICE:
Rice, early introduction, 18, 244-245.
Production, 1860 to 1906, 263.
General view and present condition, 303.
History, etymology, 303.
Nativity, 304.
Most important of cereals, 304.
Growth in America, 304-5.
How harvested, 305.
Mills and products in S. C., 305.
Table, statistics of rice, 1900 to 1906, 305.
Table, the 1900 rice crop of S. C., 305.
World's record rice crop, 314.
Railroads, 601.
ROADS, GOOD, 332-339.
Conditions up to 1888, 332.
Sand-clay roads suggested, 332.
Recommended by U. S. Department of Africulture, 1901, 332.
State Good Roads Association organized, 332.
Mileage of roads, 333.
Sources of revenue, 333.
Table, mileage and expenditures, 1904, 336.
Rush, matting, 344-345.
Rye, production, 1880 to 1907, 257.
Rye, production, 1880 to 1906, 263.

S.

Secret orders, 600.
Sericulture, 601.
STATE OF SOUTH CAROLINA:
(See Table of Contents, page 5.)
Map of, facing title page.
Leads the world, 8-9-12.
Geographical limits, 10-11.
Earliest settlement, 11-14.
Area, 12.
Drainage area, 13-14.
A glorious record, Bancroft, 21.
Territory given to U. S., 21.
Funds for Revolution, 18.
Condition in 1860, 23.
Reconstruction period, 18, 21, 23.
Farmers' movement, 1890, 24.
The Great Seal, 38-40.
The Mace, 41.
An historic chair, 42.
Officers, new, 596.
Smith, Dr. Junius (see Tea Culture), 324.
Sheppard, Dr. C. U. (see Tea Culture), 325.
SUGAR CANE:
Early experiments, 1822, 340.
Table, sugar and syrup to 1900, 340.
U. S. census report and analysis, 342.
Spartanburg (see Principal Cities), 561.
SCHOOLS:
(See Table facing 235.)
First established, 1710, 16-18.
Public system, 169.
State and county officials, 161.
Teachers, 161.
Curriculum, 161.
Present conditions, 161.
First free schools, 167.
Taxation for school purposes, 169.
Expenditure for public schools, 232.
Enrolment and average attendance, 233-234.
List of schools.
(See, also, table at page 235.)
(NOTE.—The references embrace origin, location, course of instruction, grade, enrolment, etc.)
Memminger High and Normal School, 204.
Reidville, High School, 204, 205, 230.
Charleston High School, 210.
Presbyterial High School, 210.
Welsh Neck High School, 212.
Seminary, Columbia Theological, 216.
Seminary, Erskine Theological, 216.
Seminary, Lutheran Theological, 217.
Schools, Negro—
Schofield Normal and Industrial School, 219.
State Reformatory Industrial School, 220.
Summer schools, 221.
Public high schools, 222-223.

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Rural School Improvement Association, 223.
"South Carolina," battleship, 599.
STOCK, LIVE, 355-372.
Stock and stock raising, 12-355 to 392.
Early condition, 16-356.
Increase, 241.
Live stock section, 355.
Horses, 356.
Conditions in 1880, 358, 360, 362, 364.
Table, horses, number, price, farm value, 362.
Table, mules, number, price, farm value, 362.
Table, hogs, number, price, farm value, 362.
U. S. expert opinion, 362-363.
CATTLE RAISING:
General remarks, 364.
Other than dairy, number, price, farm value, 364.
A lesson in cattle raising, 364, 366, 368.
An expert opinion, 368-370.
Table, live stock and products, 1900 to 1906, 372.
General view of present conditions, 389.
The food crops, 389.
Grass and forage, 390.
Commercial food stuffs, 390.
Soiling crops, 390.
Health of animals, 391.
Lines of inducement, 391.
Feeders and stockers, 392.
Location of future packing houses, 392.
STATE AT EXPOSITIONS AND HANDBOOKS, 587 to 593.
Exhibits at Atlanta, New Orleans and Charleston, 587.
Permanent State exhibit, Columbia, 589.
The Jamestown exhibition, 589-591.
Handbooks, 591-593.

T.

TOBACCO, 328-331.
Zone of cultivation, 328.
In ante-bellum times, 328.
Present condition, 328.
Table, acreage, production and value, 328.
U. S. provision for experiments, 328.
Production, 1886 to 1906, 263.
U. .S census reports on farms and production, 330.
Its place in markets of the world, 330.
Grade, price, 331.
Manufacture, 1900 to 1907, 331.
TRANSPORTATION:
(See Commerce and Transportation), 475.
TRUCKING INDUSTRY, 290, 320.
Acreage and value, table, 291.
Development, 291.
History, 291.
Cabbage, 291.
Potatoes, 293.
Other vegetables, 293.
Horry, Homewood and other colonies, 295.
Strawberries, 295.
Markets and transportation, 295.
Charleston district, 297.
Pecan growing, 297-299.
Table of acreage, production and value, 298-9.
Cabage plants, 299.
Largest growers in the world, 299.
Comparative value of cotton and truck crops, 299-300.
Truck business of Port Royal for spring of 1904 and 1906, 301.
Experience of two settlers from East, 302.

U.

UNIVERSITY OF SOUTH CAROLINA:
When incorporated, 177.
When opened, 177.
Distinguished professors and teachers, 177-9.
Property, 179.
Library, 179.
Presidents, 228.

V.

Valuation slaves, 247.
Valuation real estate, 248.
Decrease caused by war, 248.
Rapid increase after the war, 249.
Vice-President, 599.

W.

Wilson, Hon. Jas., view of of S. C., 10.
WATER POWERS, 146.
River system, 146-7.
Rainfall, 147.
Broad River, 148-9-154.
Saluda River, 149-50-154.
Wateree River, 151-154.
Savannah River, 151-154.
Enoree River, 152-154.
Tyger River, 152-154.
Pacolet River, 152-155.
Saluda River tributaries, 153-155.
Wateree and Catawba tributaries, 153-155.
Congaree tributaries, 153-154-155.
Savannah tributaries, 153-155-156.
Power companies, 157-8.
Manufacturing plants, owning their own powers, 159.
Cost of development, 157.
Water power available, 162.
Cost of water power, 162.
WINTHROP NORMAL AND INDUSTRIAL COLLEGE FOR WOMEN, 184.
Origin, 184.
Organization, 184.
Growth, 184.
Enrolment, 184.
Curriculum, 184.
Presidents, 228.
Women, rights of, 35.
Wheat, production, 1880-1907, 256.
Production, 1886 to 1907, 263.
Wool, production, 1886 to 1907, 263.
Watermelons, 315.

Correction—The word "peer" on page 9 should read "superior."

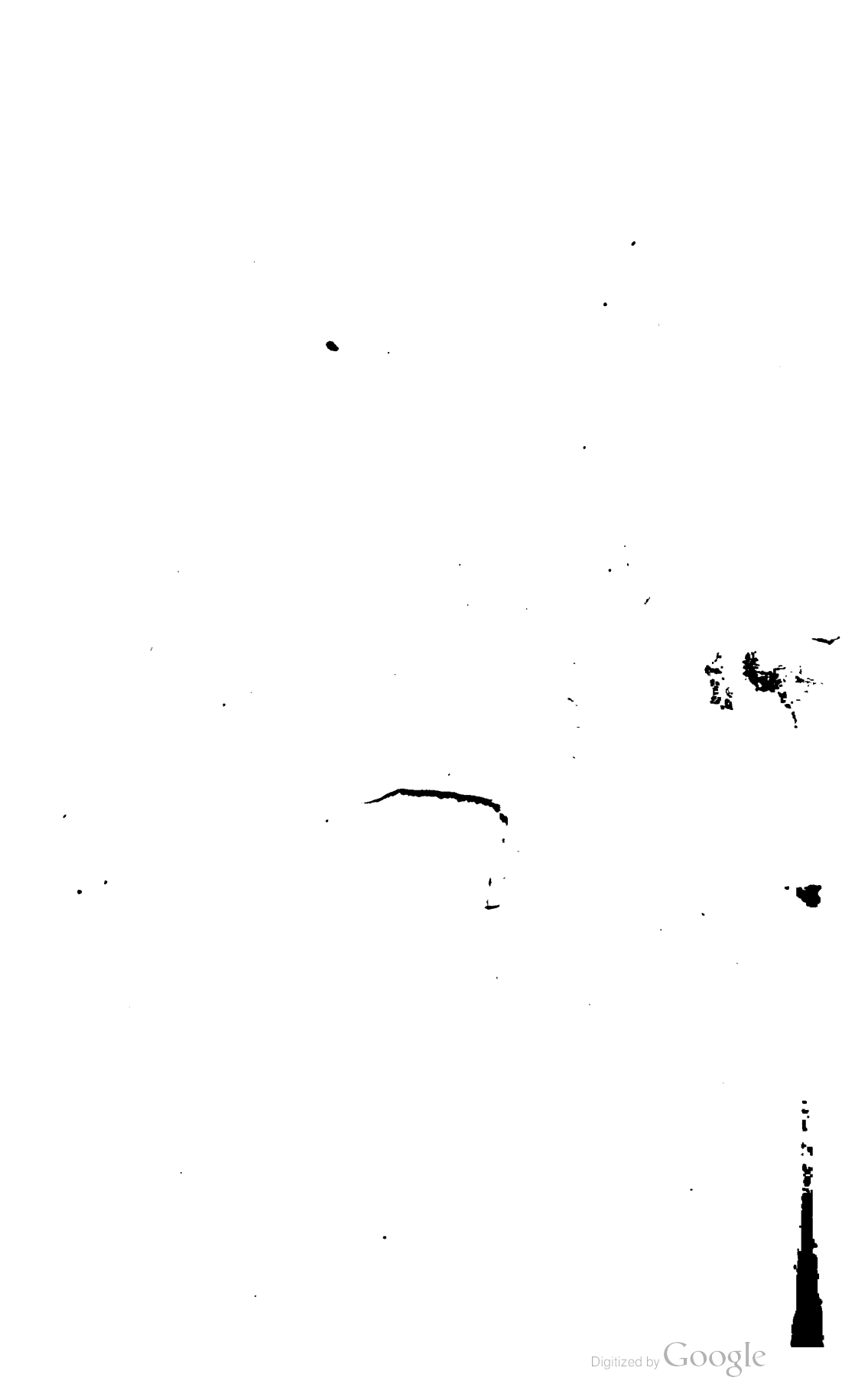
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